TECHNICAL MANUAL

INSTALLATION, OPERATION & TECHNICAL MANUAL

ELECTRICALLY HEATED MODELS:

Avenger HT

Avenger LT

Jackson WWS,INC
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March 11, 2013
P/N 07610-003-34-01 (Revision M)

MANUFACTURERS WARRANTY

ONE YEAR LIMITED PARTS & LABOR WARRANTY

ALL NEW JACKSON DISHWASHERS ARE WARRANTED TO THE ORIGINAL PURCHASER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP, UNDER NORMAL USE AND OPERATION FOR A PERIOD OF (1) ONE YEAR FROM THE DATE OF PURCHASE, BUT IN NO EVENT TO EXCEED (18) EIGHTEEN MONTHS FROM THE DATE OF SHIPMENT FROM THE FACTORY.

Jackson WWS agrees under this warranty to repair or replace , at its discretion, any original part which fails under normal use due to faulty material or workmanship during the warranty period, providing the equipment has been unaltered, and has been properly installed, maintained and operated in accordance with the applicable factory instruction manual furnished with the machine and the failure is reported to the authorized service agency within the warranty period. This includes the use of factory specified genuine replacement parts, purchased directly from a Jackson authorized parts distributor or service agency. Use of generic replacement parts may create a hazard and void warranty certification.

The labor to repair or replace such failed part will be paid by Jackson WWS, within the continental United States, Hawaii and Canada, during the warranty period provided a Jackson WWS authorized service agency, or those having prior authorization from the factory, performs the service. Any repair work by persons other than a Jackson WWS authorized service agency is the sole responsibility of the customer. Labor coverage is limited to regular hourly rates, overtime premiums and emergency service charges will not be paid by Jackson WWS.

Accessory components not installed by the factory carry a (1) one year parts warranty only. Accessory components such as table limit switches, pressure regulators, pre rinse units, etc. that are shipped with the unit and installed at the site are included. Labor to repair or replace these components is not covered by Jackson WWS. This warranty is void if failure is a direct result from shipping, handling, fire, water, accident, misuse, acts of god, attempted repair by unauthorized persons, improper installation, if serial number has been removed or altered, or if unit is used for purpose other than it was originally intended.

TRAVEL LIMITATIONS:

Jackson WWS limits warranty travel time to (2) two hours and mileage to (100) one hundred miles. Jackson WWS will not pay for travel time and mileage that exceeds this, or any fees such as those for air or boat travel without prior authorization.

WARRANTY REGISTRATION CARD

The warranty registration card supplied with the machine must be returned to Jackson WWS within 30 days to validate the warranty.

REPLACEMENT PARTS WARRANTY

Jackson replacement parts are warranted for a period of 90 days from the date of installation or 180 days from the date of shipment from the factory, which ever occurs first.

PRODUCT CHANGES AND UPDATES

Jackson WWS reserves the right to make changes in design and specification of any equipment as engineering or necessity requires.

THIS IS THE ENTIRE AND ONLY WARRANTY OF JACKSON WWS. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND, INCLUDING NEGLIGENCE, WITH RESPECT TO THE GOODS OR SERVICES COVERED HEREUNDER, SHALL IN NO CASE EXCEED THE PRICE OF THE GOODS OR SERVICES OR PART THEREOF WHICH GIVES RISE TO THE CLAIM.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING FOR FITNESS OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF. UNDER NO CIRCUMSTANCES WILL JACKSON WWS BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, OR FOR THE DAMAGES IN THE NATURE OF PENALTIES, ARISING OUT OF THE USE OR INABILITY TO USE ANY OF ITS PRODUCTS.

ITEMS NOT COVERED:

This warranty does not cover cleaning or deliming of the unit or any component such as, but not limited to, wash arms, rinse arms or strainers at anytime. Nor does it cover adjustments such as, but not limited to timer cams, thermostats or doors, beyond 30 days from the date of installation. In addition, the warranty will only cover the replacement of wear items such as curtains, drain balls, door guides or gaskets during the first 30 days after installation. Also, not covered are conditions caused by the use of incorrect (non-Commercial) grade detergents, incorrect water temperature or pressure, or hard water conditions.

CALL 1-888-800-5672 TO REGISTER THIS PRODUCT!
FAILURE TO DO SO WILL VOID THE WARRANTY!

LLAME AL 1-888-800-5672 PARA REGISTRAR ESTE PRODUCTO!
AL NO HACERLO LA GARANTIA SERA ANULADA!

S.V.P. APPELER 1-888-800-5672 POUR ENREGISTRER CE PRODUIT,
LA GARANTIE SERA ANNULEE POUR TOUT PRODUIT NON- ENREGISTREE

Revision Letter	Revision Date	Made By	Applicable ECNs	Details
A	05-02-07	MAW	N/A	Release to Production
B	05-22-07	JDD	7920	Changed Schematics to new color scheme
29	08-06-07	MAW	7930	Updated Avenger HT Incoming plumbing supply
C	10-07-07	MAW	PROCESS	Added Avenger LTH designation. Added 480 Volt Avenger HT
	11-20-07	MAW	PROCESS	Corrected 480 Volt Avenger HT Components
47 & 48	1-31-08	MAW	PROCESS	Updated Installation instructions. Replaced LTH with LT designation. Added vacuum switch assembly
D	9-18-09	ARL	090902-1157-CW 090902-1201-CW	Updated Plumbing to show soldered pipe and new valve
E	02-08-10	RLC	8151	Added fused universal timer as alternate in assemblies
F	05-05-10	RLC	8157	Changed Squeeze tubes in HT peri-pump Assembly
G	06-18-10	RLC	QOF 385	Updated LTH schematic
H	04-13-11	TC/LN	DEV 11-14	Converted to publisher format, made LT Heater an option..
I	09-12-11	CW	QOF-386	Adjusted timer programming chart
J	02-09-12	RC	8215	Removed Bottom Panel from pg 50
K	04-18-12	RC	QOF-386	Added Energy Star logo
L	06-07-12	RC	QOF-386	Added Rinse Gasket to HT Plumbing Assembly (pg 38)
M	03-11-13	RC	QOF NDB-219	Update Jackson logo, and company name.

NOMENCLATURE FOR THE MODELS COVERED IN THIS MANUAL

AVENGER HT

AVENGER LT

Avenger HT = High temperature, hot water sanitizing, with a booster tank.
Detergent & rinse aid chemical feeder pumps.

Avenger LT = Low temperature, chemical sanitizing, no booster tank.
Detergent, rinse aid & sanitizer chemical feeder pumps.

Model:_____

Serial No.:_____

Installation date:_____

Service Rep. Name: _____

Phone number: _____

Jackson WWS, INC provides technical support for all of the dish machines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual with you when you call so that our staff can refer you if necessary, to the proper page. Technical support is available from 8:00 a.m. to 5:00 p.m. (EST) Monday through Friday. Technical support is not available on holidays. Contact technical support toll free at 1-888-800-5672. Please remember that technical support is available for service personnel only.

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Operating Parameters

Model Designation:	**AVENGER HT**	**AVENGER LT**
Operating Capacity:		
Racks per Hour	24	24
Dishes per Hour	600	600
Glasses per Hour	864	864
Tank Capacity (gallons):		
Wash Tank	1.1	1.2
Rinse Tank	1.1	3.0
Electrical Loads (as applicable):		
Wash Motor HP	0.75	0.75
Rinse Heater KW	8.2	N/A

NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and is subject to change without notice.

HOT WATER SANITIZING		
Water Temperatures (Fahrenheit):		
Minimum Wash Temperature	150	N/A
Minimum Rinse Temperature	180	N/A
Incoming Water Temperature	110	N/A
CHEMICAL SANITIZING		
Water Temperatures (Fahrenheit):		
Minimum Wash Temperature	N/A	120
Minimum Rinse Temperature	N/A	120
Incoming Water Temperature	N/A	120
Other Water Requirements:		
Water Flow Pressure (PSIG)	20	20
Flow Rate Minimum (GPM)	0.44	0.48
Water Line Size (NPT)	1/2”	1/2”
Drain Line Size (NPT)	1-3/8”	1-3/8”
MIN. CHLORINE REQUIRED (PPM)	N/A	50

Notes Regarding Electrical Requirements

All electrical ratings provided in this manual are for reference only. Always refer to the machine data plate to get the exact electrical information for your machine. All electrical work performed on machines should be done in accordance with applicable local, state, territorial and national codes. Work should only be performed by qualified electricians and authorized service agents. A list of Jackson Authorized Service Agencies is located in the back of this manual.

Note that all electrical wiring used in the AVENGER series of machines must be rated, at a minimum, for 100C (212F). Furthermore, use copper conductors only.

Where applicable, heating element amperage draws have been adjusted for the assumed input voltage. Jackson assumes incoming voltages will be either 208, 230 or 460 volts. Some of the heating elements used in our machines are actually rated for other voltages, such as 240 or 480 volts. Always verify the amperage draw of the machine in operation when sizing circuit protection.

If your machine is equipped with the optional rinse heater, note the rinse heater has its own electrical connection and therefore requires a separate service. Amperage loads for motors and heaters are called out on the machine data plate for the installation/service technician.

The electrical configurations of the AVENGER series of machines are as follows:

Available Electrical Characteristics:

- 115 volt, 60 Hz, single phase
- 208 volt, 60 Hz, single phase
- 230 volt, 60 Hz, single phase
- 460 volt, 60 Hz, three phase

Available Wash Tank Heaters:

- 8.2KW (standard for AVENGER HT)

Electrical Requirements for AVENGER HT & LT

AVENGER HT 8.2 kW Wash Heater

Volts	Ph	Freq	Wash Motor Amps	Drive Motor Amps	Wash Heater Amps	FLA		
208	1	60	2.69 A	N/A	39.42A	42.11 A		
230	1	60	2.43 A	N/A	35.65 A	38.08 A		
460	3	60	0.67 A	N/A	9.87 A	10.54 A		

AVENGER LT

Volts	Ph	Freq	Wash Motor Amps	Drive Motor Amps	Wash Heater Amps	FLA		
115	1	60	2.69 A	N/A	N/A	13.2 A		

AVENGER HT DIMENSIONS

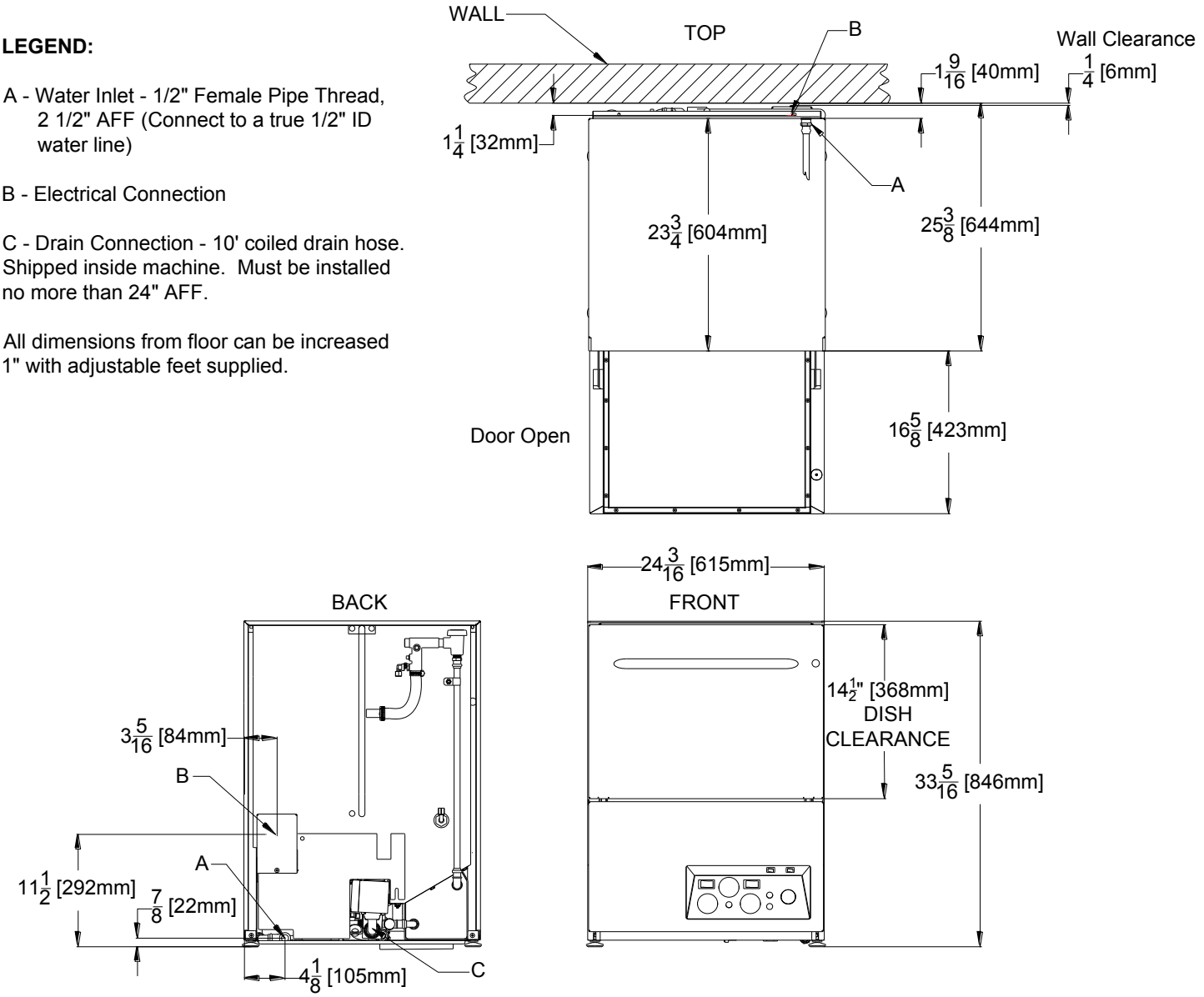
LEGEND:

A - Water Inlet - 1/2" Female Pipe Thread, 2 1/2" AFF (Connect to a true 1/2" ID water line)

B - Electrical Connection

C - Drain Connection - 10' coiled drain hose. Shipped inside machine. Must be installed no more than 24" AFF.

All dimensions from floor can be increased 1" with adjustable feet supplied.



***All dimensions are for reference only and are subject to change without notice.**

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AVENGER LT DIMENSIONS

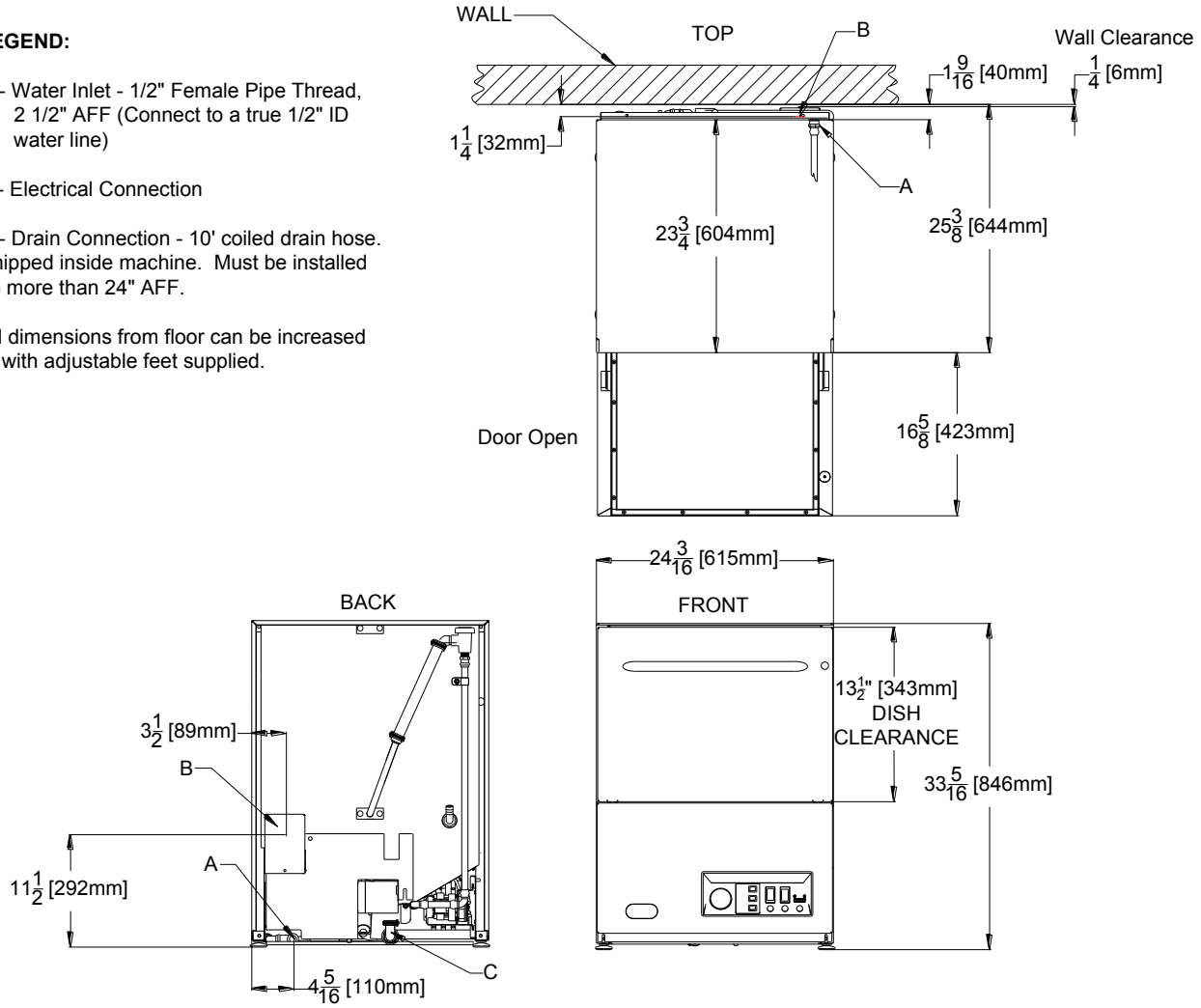
LEGEND:

A - Water Inlet - 1/2" Female Pipe Thread, 2 1/2" AFF (Connect to a true 1/2" ID water line)

B - Electrical Connection

C - Drain Connection - 10' coiled drain hose. Shipped inside machine. Must be installed no more than 24" AFF.

All dimensions from floor can be increased 1" with adjustable feet supplied.



***All dimensions are for reference only and are subject to change without notice.**

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INSTALLATION INSTRUCTIONS

VISUAL INSPECTION: Before installing the unit, check the container and the machine for damage. A damaged container may be an indication there is possible damage to the machine. If there is any type of damage to both the container and the unit, DO NOT THROW AWAY THE CONTAINER. The dish-machine has been previously inspected at the factory and is expected to arrive to you in new, undamaged condition. However, rough handling by carriers or others may result in damage to the unit while it is in transit. If such a situation occurs, DO NOT RETURN THE UNIT TO JACKSON. Instead, contact the carrier and ask them to send a representative to the site to inspect the damage. You should request that an inspection report be completed. You must contact the carrier within 48 hours of receiving the machine in order to report possible freight damage. You are also encouraged to contact the dealer through which you purchased the unit.

UNPACKING THE MACHINE: The machine should be unboxed and/or removed from the pallet prior to installing. Open the front door and remove all of the materials from the inside. Once unpacked, verify there are no missing parts to the best of your ability. If you discover a part is missing, contact Jackson immediately.

LEVEL THE DISH MACHINE: The dish-machine is designed to operate while level. This is important to prevent any damage to the machine during operation and to ensure the best results possible. The unit comes equipped with adjustable feet, which can be turned using a pair of channel locks or by hand. Verify the unit is level from front to back and side to side prior to making any electrical or plumbing connections.

PLUMBING THE MACHINE: All plumbing connections must be made to adhere to local, state, territorial and national codes. The installing plumber is responsible for ensuring the incoming water lines are flushed of debris prior to connecting to the machine. Note that chips and materials from cutting processes can become lodged in the solenoid valves and prevent them from opening or closing. Any valves that are found to be fouled or defective because of foreign matter left in the water line, and any subsequent water damage, are not the responsibility of the manufacturer.

A water hardness test must be performed to determine if the HTS-11 (scale prevention & corrosion control) need to be installed. A hardness test kit is attached to the warning tag that is attached to the incoming plumbing connection on the back of the machine. If the hardness is higher than 5 GPG the HTS-11 will need to be installed. Please contact Jackson immediately to have this shipped to you.

WATER SUPPLY CONNECTIONS FOR MACHINE WITH WATER HARDNESS GREATER THAN 5 GPG:

Ensure you have reads the above section entitled “PLUMBING THE MACHINE” above before proceeding. Install the HTS-11 into the water line (1/2” ID pipe size minimum) before the dish machine line incoming water connection point using copper pipe. The HTS-11 must be installed vertically. A mounting bracket is provided to facilitate the venture metering head to the wall. Observe proper inlet/outlet water directions. Flow directions are molded into the top of the head. It is recommended that a water shut off valve be installed before the HTS-11 to allow access for servicing. Plumb from the HTS-11 outlet to the incoming water connection point using copper pipe (or order the 1/2” ID flexible hose kit offered by Jackson). The water supply is to be capable of 20 PSI (plus or minus 5 PSI) “flow” pressure at the recommended temperature indicated on the data plate. See “Shock Absorber” section.

INSTALLATION INSTRUCTIONS (CONTINUED)

WATER SUPPLY CONNECTION FOR MACHINES WITH A WATER HARDNESS OF 5 GPG OR LESS:
Ensure you have read the section entitled "PLUMBING THE DISH MACHINE" before proceeding. Install the water supply line (1/2" ID pipe size minimum) to the dish machine incoming water connection point using copper pipe (or order the 1/2" ID flexible hose kit offered by Jackson). It is recommended that a water shut off valve be installed in the water line between the main supply and the machine to allow access for service. The water supply line is to be capable of 20 PSI (plus or minus 5 PSI) "flow" pressure at the recommended temperature indicated on the data plate.

CHEMICAL CONNECTIONS: Upon first installation, the chemical alarm will buzz until the chemical feeder pumps are primed. If the chemicals run out, the chemical alarm will buzz until the chemical is replaced and primed if necessary. The bottom of the chemical container cannot be located any higher than 8" from the floor. If the unit is shipped with a 6" or 18" table stand, then the highest position will be respectively 14" or 26" from the floor.

PRESSURE REGULATOR: Jackson has provided a water pressure regulator due to areas where the water pressure fluctuates or is lower than the recommended pressure. In some cases, you may not need the regulator and in those cases, the regulator maybe removed. DO NOT confuse STATIC pressure with FLOW pressure. Static pressure is the line pressure in a "no flow" condition (all valves and services are closed). Flow pressure is the pressure in the fill line when the valve is opened during the cycle.

SHOCK ABSORBER: Also, it is suggested that a shock absorber (NOT SUPPLIED) be installed on the incoming water line. This prevents water hammer (hydraulic shock), induced by the solenoid valve as it operates, from causing damage to the equipment.

CONNECTING THE DRAIN LINE: The dish machine has a pumped (pressure) drain capable of pumping waste water to a height of 24" above the floor to the kitchens drain system. Each dish machine is supplied with a ten foot long hose. This ships INSIDE the unit. When installed, it will extend from the rear side of the machine. There also must be an air gap between the machine drain line and the floor sink or drain. If a grease trap is required by code, it should have a flow capacity of 12 GPM (Gallons Per Minute).

PLUMBING CHECK: Slowly turn on the water supply to the machine after the incoming fill line and the drain line have been installed. Check for any leaks and repair as required. All leaks must be repaired prior to placing the machine into operation.

ELECTRICAL POWER CONNECTIONS: Electrical and grounding conductors must comply with the applicable potions of the National Electric Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

Disconnect electrical power supply and place a tag at the disconnect switch to indicate you are working on the circuit.

The data plate is located toward the right front side of the dish machine. Refer to the data plate for machine operating requirements, machine voltage, total amperage & serial number.

INSTALLATION INSTRUCTIONS (CONTINUED)

To install the incoming power lines, remove the back panel. This will require taking a Phillips head screw driver and removing the two screws at the bottom of the back panel; remove the back panel and set aside. Install 3/4" conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires (L1 and L2) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.

VOLTAGE CHECK: Ensure that the power switch is in the OFF position and apply power to the dish machine. Check the incoming power at the terminal block and ensure it corresponds with the voltage listed on the data plate. If not, contact a qualified service agency to examine the problem. Do not run the dish machine if the voltage is too high or too low. Shut off the service breaker and mark it as being for the dish machine. Advise all proper personnel of any problems and of the location of the service breaker. Replace the control box cover and tighten down the screws.

DISH MACHINE VENTILATION: The dish-machine should be located with provisions for venting into an adequate exhaust hood or ventilation system. This is essential to permit efficient removal of the condensation exhaust. Ensure the exhaust system is acceptable in accordance with applicable codes and standards.

Note: any damage that is caused by steam and/or moisture due to improper ventilation is NOT covered under the warranty.

SURROUNDING AREA: This is a commercial dish machine and reaches temperatures that can exceed those generated by a residential machine. Therefore, any surrounding countertops, cabinets, flooring material & subfloor material must be designed and/or selected with these higher temperatures in mind.

Note: any damage to surrounding area that is caused by heat and or moisture to materials selected that are NOT recommended for higher temperatures will not be covered under warranty or by Jackson WWS, INC.

THERMOSTATS: The thermostats on your AVENGER unit have been set at the factory. They should only be adjusted by an authorized service agent.

CHEMICAL FEEDER EQUIPMENT: WARNING! CHLORINE BASED SANITIZERS CAN BE DETRIMENTAL TO YOUR MACHINE IF THE CHEMICAL SOLUTION IS TOO STRONG. SEE YOUR CHEMICAL PROFESSIONAL TO ENSURE YOUR DISPENSER IS SET UP CORRECTLY.

This equipment is not recommended for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result or corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturers warranty.

NOTE: The bottom of the chemical container cannot be located any higher than 8" from the floor. If the unit is equipped with the 6" or 18" table stand, then the highest position will respectively be 14" or 26" from the floor. this, contact Jackson immediately for assistance.

INSTALLATION INSTRUCTIONS (CONTINUED)

TO PREPARE CHEMICAL FEEDER PUMPS FOR OPERATION:

The AVENGER HT dish machine is supplied with integral detergent and rinse aid chemical feeder pumps. The AVENGER LT dish machine is supplied with integral detergent, rinse additive, and sanitizer chemical feeder pumps. Locate the open ends of the chemical tubes with the tube stiffeners and place each one in the appropriate container.

A. Red Tubing=Detergent
B. Blue Tubing= Rinse Aid
C. White Tubing= Sanitizer

PRIMING CHEMICAL FEEDER PUMPS:

Chemical feeder pumps need priming when the machine is first installed or if for some reason, the chemical lines have been removed and air is allowed to enter.

CAUTION! Water must be in the sump and wash tank prior to the dispensing of chemicals. Sanitizer in concentration is caustic and may cause damage without dilution.

1. Verify that the proper chemical tube stiffener inlet is in the proper container.
2. Use the prime switches located on the control panel at the bottom of the unit to prime each pump. The switches are clearly marked as to what chemical feeder pump they are assigned to.
3. To prime the pumps, hold the switch in the momentary position until chemical can be observed entering the pump.
4. Detergent is dispensed as required during the wash cycle by the timer. The amount of detergent may need to be increased or decreased depending upon water quality and type of detergent.
5. Rinse additive is dispensed as required into the final rinse. The amount of rinse additive may need to be adjusted depending upon water hardness & results.
6. Sanitizer (either chlorine or iodine) is dispensed into the final rinse. The amount of sanitizer may need to be adjusted depending on the concentration and type of sanitizer used.
7. Please refer to the next page for instruction on adjusting the chemical feeder pumps on the universal timer.

WARNING: Some of the chemicals used in dish washing may cause chemical burns if they come in contact with your skin. Wear protective gear when handling these chemicals. If you do come in contact with these chemicals, immediately follow the instructions provided with the chemicals for treatment.

INSTALLATION INSTRUCTIONS (CONTINUED)

PROGRAMMING INSTRUCTIONS FOR CHEMICAL FEEDER PUMPS (INSTALLATION TECHNICIAN ONLY)

To access the programming mode, the machine must be ON and idle (between cycles).

On the timer board, press and hold both the MOVE and ENTER buttons on the timer board simultaneously for two seconds.

The PROGRAM (PGM) light and light A will illuminate.

NOTE: Once in the programming mode, the MOVE button is used to scroll between the programming categories and the ENTER button is used to select the category.

Press the MOVE button to move the solid light to the desired location of FILL, RINSE AID, DETERGENT, or SANITIZER. Please note that options A, B, C and D are not adjustable outputs.

Press the ENTER button for the chosen category. Now, the (PGM) light will illuminate along with lights corresponding to the time values for the chosen category. The ACCEPT light will blink.

The PROGRAM light will illuminate.

To change the value of a parameter, use the MOVE button to illuminate the light next to the time option (time is measured in seconds). In the time categories, each second in use will light up. To deselect the option, press ENTER and the light will go off, press ENTER again and it will illuminate. Once you have set your time catergory, press the MOVE button until the ACCEPT light illuminates and press ENTER. This will save the changed parameters.

Once you press the ENTER button when the ACCEPT light is blinking you will exit the programming mode. To change any other values, you will have to return to the programming mode. To revert back to a previous setting, you must return to that option and change the parameter back to the previous setting.

Once in the programming mode, if there have been no keypad inputs for approximately two minutes, the system will automatically exit out of the programming mode. Any changes to parameters will be saved when the programming mode is automatically exited.

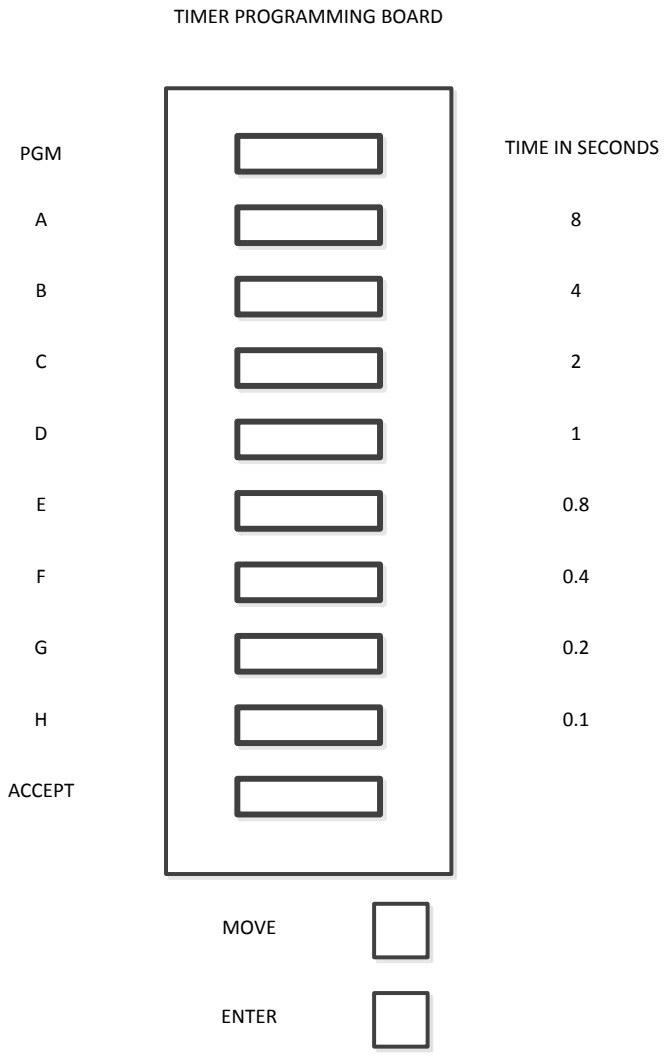
The wash and drain cycles are not adjustable.

All time adjustments are in seconds. Refer to the chart on the following page for adjustable outputs.

INSTALLATION INSTRUCTIONS (CONTINUED)

PROGRAMMING INSTRUCTIONS FOR CHEMICAL FEEDER PUMPS (CONTINUED)

PGM	Avenger HT	Avenger LT
E	Not adjustable	Rinse Aid
F	Rinse	Fill
G	Detergent	Sanitizer
H	Rinse Aid	Detergent



INSTALLATION INSTRUCTIONS (CONTINUED)

DETERGENT CONTROL:

Detergent usage and water hardness are two factors that contribute greatly to how efficiently your dish machine will operate. Using detergent in the proper amount can become, in time, a source of substantial savings. A qualified water treatment specialist can tell you what is needed for maximum efficiency from your detergent, but you should still know some basics so you'll understand what they are talking about.

First, you must understand that hard water greatly effects the performance of the dish machine. Water hardness is the amount of dissolved calcium and magnesium in the water supply. The more dissolved solids in the water, the greater the water hardness. Hard water works against detergent, thereby causing the amount of detergent required for washing to increase. As you use more detergent, your costs for operating the dish machine will increase and the results will decrease. The solids in hard water also may build-up as a scale on wash and rinse heaters, decreasing their ability to heat water. Water temperature is important in removing soil and sanitizing dishes. If the water cannot get hot enough, your results may not be satisfactory. This is why Jackson recommends that if you have installed the machine in an area with hard water, that you also install some type of water treatment equipment to help remove the dissolved solids from the water before it gets to the dish machine.

Second, hard water may have you adding drying agents to your operating cycle to prevent spotting, when the real problem is deposited solids on your ware. As the water evaporates off of the ware, the solids will be left behind to form the spotting and no amount of drying agent will prevent this. Again, using treated water will undoubtedly reduce the occurrences of this problem.

Third, treated water may not be suitable for use in other areas of your operation. For instance, coffee made with soft water may have an acid or bitter flavor. It may only be feasible to install a small treatment unit for the water going into the dish machine itself. Discuss this option with your qualified water treatment specialist.

Even after the water hardness problems have been solved, there still must be proper training of dish machine operators in how much detergent is to be used per cycle. Talk with your water treatment specialist and detergent vendor and come up with a complete training program for operators. Using too much detergent has as detrimental effects as using too little. The proper amount of detergent must be used for job. It is important to remember that certain menu items may require extra detergent by their nature and personnel need to be made aware of this. Experience in using the dish machine under a variety of conditions, along with good training in the operation of the machine, can go a long way in ensuring your dish machine operates as efficiently as possible.

Certain dish machine models require that chemicals be provided for proper operation and sanitization. Some models even require the installation of third-party chemical feeders to introduce those chemicals to the machine. Jackson does not recommend or endorse any brand name of chemicals or chemical dispensing equipment. Contact your local chemical distributor for questions concerning these subjects.

INSTALLATION INSTRUCTIONS (CONTINUED)

DETERGENT CONTROL (CONTINUED):

Some dish machines come equipped with integral solid detergent dispensers. These dispensers are designed to accommodate detergents in a certain sized container. If you have such a unit, remember to explain this to your chemical distributor upon first contacting them.

As explained before, water temperature is an important factor in ensuring that your dish machine functions properly. The data plate located on each unit details what the minimum temperatures must be for either the incoming water supply, the wash tank and the rinse tank, depending on what model of dish machine you have installed. These temperatures may also be followed by temperatures that Jackson recommends to ensure the highest performance from you dish machine. However, if the minimum requirements are not met, the chances are your dishes will not be clean or sanitized. Remember, a dish can look clean, but it may not be sanitized. Instruct your dish machine operators to observe the required temperatures and to report when they fall below the minimum allowed. A loss of temperature can indicate a much larger problem such as a failed heater or it could also indicate that the hot water heater for your operation is not up to capacity and a larger one may need to be installed.

There are several factors to consider when installing your dish machine to ensure that you get the best possible results from itand that it operates at peak efficiency for many years. Discuss your concerns with your local chemical distributor and water treatment specialist before there is a problem.

OPERATION INSTRUCTIONS

PREPARATION:

Before proceeding with the start-up of the unit, verify the following:
1. The strainer is in place and is clean.
2. That the wash and rinse arms are screwed securely into place and that their end caps are tight. The wash and rinse arms should rotate freely.
3. Verify all chemical levels for machine chemical feeder pumps are correct.

POWER UP: To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified.

FILLING THE WASH TUB: For the initial fill, close the door and ensure that the MANUAL switch light is not on. Depress and hold the START CYCLE switch until the auto light comes on and then release the button. For the initial fill, run the machine through 3 cycles to fill the tub sump. The machine will run a partial cycle and fill to the bottom of the pan strainer. Open the door and verify that the water level is correct.

NOTE: For the Avenger™HT: Ensure the orange/white wires at the heater contactor are connected properly. They have been purposely disconnected at the factory to avoid damage to the heater element when there is no water in the booster heater.

Hereafter, the water level is controlled by the timer that has been preset at the factory. Verify that there are no other leaks on the unit before proceeding any further. The wash sump must be completely filled before operating the wash pump to prevent damage to the component. Once the wash tub is filled, the unit is ready for operation.

The machine runs a complete cycle to drain and fill. If the machine is not allowed to drain, the water will build up inside the tub. After the initial fill, the rinse water for the current cycle will become the wash water for the next cycle.

WARE PREPARATION: Proper preparation of ware will help ensure good results and less re-washes. If not done properly, ware may not come out clean and the efficiency of the dish machine will be reduced. It is important to remember that a dish machine is not a garbage disposal and that simply throwing un scraped dishes into the machine simply defeats the purpose altogether of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dish machine is meant not only to clean, but to sanitize as well, to destroy all of the bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

DAILY MACHINE PREPARATION: Refer to the section entitled “PREPARATION” at the top of this page and follow the instructions there. Afterwards, check that all of the chemical levels are correct and/or that there is plenty of detergent available for the expected workload.

OPERATION INSTRUCTIONS (CONTINUED)

WARM-UP CYCLES: For a typical daily start-up, it is recommended to run the machine through 3 cycles to ensure that all of the cold water is out of the system and to verify that the unit is operating correctly. To cycle the machine, ensure that the power is on and that the tub has filled to the correct level.

Push the START CYCLE button and hold until the green cycle light is on and then release, the unit will start, run through the cycle, and shut off automatically. Repeat this two more times. The unit should now be ready to proceed with the washing of ware.

WASHING A RACK OF WARE: To wash a rack, open the door completely and slide the rack into the unit. Close the door, press the START CYCLE button and hold until the green cycle light is on and release, the unit will start. Once the cycle is completed, open the door and remove the rack of clean ware. Replace with a rack of soiled ware and close the door. The process will then repeat itself.

OPERATIONAL INSPECTION: Based upon usage, the pan strainer may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainer to ensure it has not become clogged. If the strainer does, it will reduce the washing capability of the machine. Instruct operators to clean out the pan strainer at regular intervals or as required by work load.

SHUTDOWN AND CLEANING: At the end of the workday, close the door. Start a cycle. Wait approximately five seconds after the green cycle light comes on and then push the POWER OFF switch. This will put the machine in shutdown mode which will let the machine drain completely prior to shutting off. Once the wash tub is drained and power light is off, remove he pan strainer. Remove soil and debris from the strainer and set to the side. Unscrew the wash and rinse arms from their manifolds. Remove the end caps and flush the arms with water. Use a brush to clean out the inside of the arms. If the nozzles appear to be clogged, use a toothpick to remove the obstruction. Wipe the inside of the unit out, removing all soil and scraps. Reassemble the wash and rinse arms and replace them in the unit. The arms only need to be hand tight, do not use tools to tighten them down. Reinstall the strainer and close the door.

OPERATION INSTRUCTIONS (CONTINUED)

DELIMING OPERATIONS: In order to maintain the dish machine at its optimum performance level, it will be required to remove lime and corrosion deposits on a frequent basis. A deliming solution should be available from your detergent supplier. Read and follow all instructions on the label of the deliming solution.

NOTE: If this machine is equipped with a HTS-11, scale prevention and corrosion control device, and lime is becoming a frequent problem, the cartridge needs to be replaced. To order a replacement cartridge, call Jackson immediately to have one shipped to you.

To proceed with the deliming operation, fill the dish machine and add the correct amount of deliming solution as recommended by the deliming solution manufacturer. The water capacity of the tank can be verified on the specification sheet (s) of this manual.

Perform the following operations to delime the dish machine:

1. Push Manual Switch on the front of the control panel.
2. Close the door (after adding the deliming solution).
3. Run the machine for the recommended period of time.
4. Press the Power Switch to turn the unit off and open the door.
5. Wait five minutes, then inspect the inside of the machine. If the machine is not delimed, run another time cycle as per the deliming solution's instructions.
6. When clean, drain and re-fill the machine.
7. Run in MANUAL for 10 minutes to remove residual deliming solution.
8. Drain and re-fill the machine.

PREVENTATIVE MAINTENANCE

The dish machines covered in this manual are designed to operate with a minimum of interaction with the operator. However, this does not mean that some items will not wear out in time. Jackson highly recommends that any maintenance and repairs not specifically discussed in this manual should be performed by QUALIFIED SERVICE PERSONNEL ONLY. Performing maintenance on your dish machine may void your warranty if it is still in effect.

There are many things that operators can do to prevent catastrophic damage to the dish machine. One of the major causes of component failure has to do with pre-scrapping procedures. A dish machine is not a garbage disposal; any large pieces of material that are put into the machine shall remain in the machine until they are either broken up (after spreading out on your ware!) or physically removed. Strainers are installed to help catch debris, but they do no good if they are clogged. Have operators regularly inspect the pan strainers to ensure (1) that they are free of soil and debris and (2) they are laying flat in the tub.

When cleaning out strainers, do NOT beat them on waste cans. The strainers are made of metal and can be forgiving; but once severe damage is done, it is next to impossible for the strainer to work in the way it was designed to. Wipe out strainers with a rag and rinse under a faucet if necessary. For stubborn debris, a toothpick should be able to dislodge any obstructions from the perforations. Always ensure that strainers are placed back in the machine before operation and that they lay flat in the tub.

You may wish to also refer to the page entitled “Detergent Control” in order to learn more about how your water hardness will effect the performance of your machine. Hard water makes dish machines work harder and decreases efficiency.

Again, it is important to remind operators that trying to perform corrective maintenance on the dish machine could lead to larger problems or even cause harm to the operator. If a problem is discovered; secure the dish machine using proper shut down procedures as listed in this manual and contact a QUALIFIED SERVICE AGENCY.

Some problems, however, may having nothing to do with the machine itself and no amount of preventative maintenance is going to help. A common problem has to do with temperatures being too low. Verify that the water temperatures coming to your dish machine match the requirements listed on the machine data plate. There can be a variety of reasons why your water temperature could be too low and you should discuss it with a QUALIFIED SERVICE AGENCY to determine what can be done.

By following the operating and cleaning instructions in this manual, you should get the most efficient results from our machine. As a reminder, here are some steps to take to ensure that you are using the dish machine the way it was designed to work:

1. Ensure that the water temperatures match those listed on the machine data plate.
2. Ensure that all strainers are in place before operating the machine.
3. Ensure that all wash and/or rinse arms are secure in the machine before operating.
4. Ensure that drains are closed/sealed before operating.
5. Remove as much soil from dishes by hand as possible before loading into racks.
6. Do not overfill racks.
7. Ensure that glasses are placed upside down in the rack.
8. Ensure that all chemicals being injected to machine have been verified as being at the correct concentrations.
9. Clean out the machine at the end of every workday as per the instructions in the manual.
10. Always contact a QUALIFIED SERVICE AGENCY whenever a serious problem arises.
11. Follow all safety procedures, whether listed in this manual or put forth by local, state or national codes/ regulations.

TROUBLE SHOOTING COMMON PROBLEMS

WARNING: Inspection, testing and repair of electrical equipment should be performed only by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. **Exercise extreme caution at all times.** If test points are not easily accessible, disconnect power, attach test equipment and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

Problem: Water overflow from bottom of door.
1. Clogged drain. Remove obstruction.
2. Machine not level. Level machine, or increase height to the front.
3. Excessive inlet pressure. Install pressure reducing valve, or adjust if one is present. Ensure flow is 20 ±5 PSI.
4. Detergent foaming. Reduce detergent quantity.

Problem: Wash motor doesn't operate on manual wash.
1. Loose or broken wires. Reconnect or replace wires in motor.
2. Defective manual wash switch. Replace.
3. Defective motor starting relay. Replace.

Problem: Motor operates on manual wash but not on automatic.
1. Defective circuit in manual wash switch. Replace switch.

Problem: No water comes through the rinse arms when the "ON/FILL" switch is depressed.
1. Water not turned on. Turn water on.
2. Defective solenoid valve. Replace solenoid valve.

Problem: Little or no water coming through the rinse assemblies.
1. Limed up rinse heads or piping. Delime rinse heads.
2. Low water pressure. Increase pipe size to machine. Adjust pressure regulator.

Problem: Rinse water runs continuously with breaker turned off.
1. Defective plunger in solenoid valve. Replace.
2. Defective diaphragm in solenoid valve. Replace diaphragm.

Problem: Wash temperature not at required reading on thermometer.
1. Check that orange/white wires are connected. See note on page 12.
2. Defective thermometer. Replace.
3. Defective thermostat. Adjust thermostat. Replace thermostat.
4. Rinse heater defective. Replace heater element.
5. Defective heater contactor R1. Replace.
1. Water turned off. Turn water on.
2. Pressure gauge defective. Replace pressure gauge.

TROUBLE SHOOTING COMMON PROBLEMS (CONTINUED)

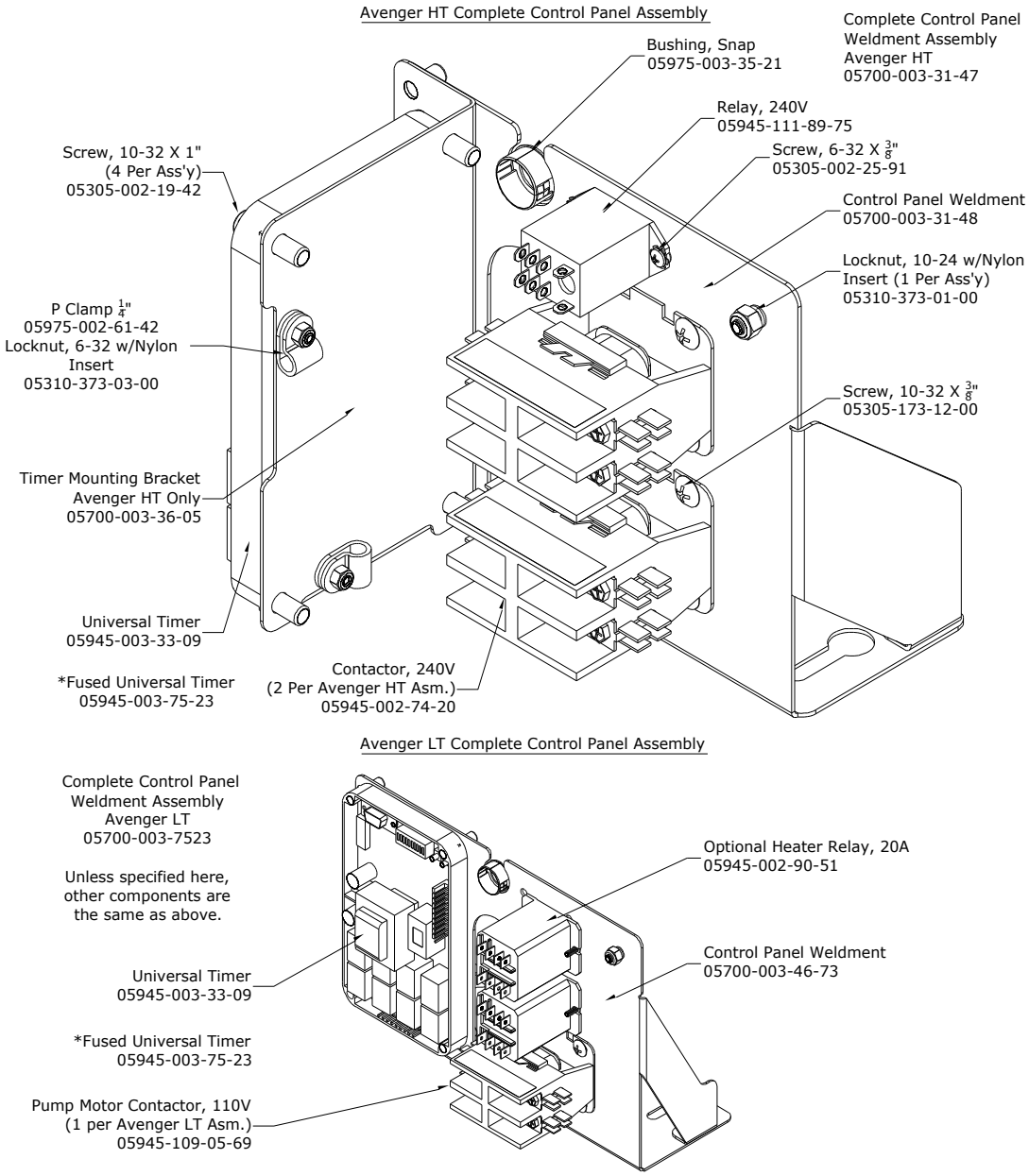
WARNING: Inspection, testing and repair of electrical equipment should be performed only by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. **Exercise extreme caution at all times.** If test points are not easily accessible, disconnect power, attach test equipment and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

Problem: Rinse water not at required temperature range.
1. Check that orange/white wires are connected. See note in installation instructions.
2. Thermometer is defective. Replace.
3. Thermostat is defective. Adjust the thermostat. Replace if necessary.
4. Incoming rinse water does not meet minimum criteria indicated on machine data plate. Adjust as required.

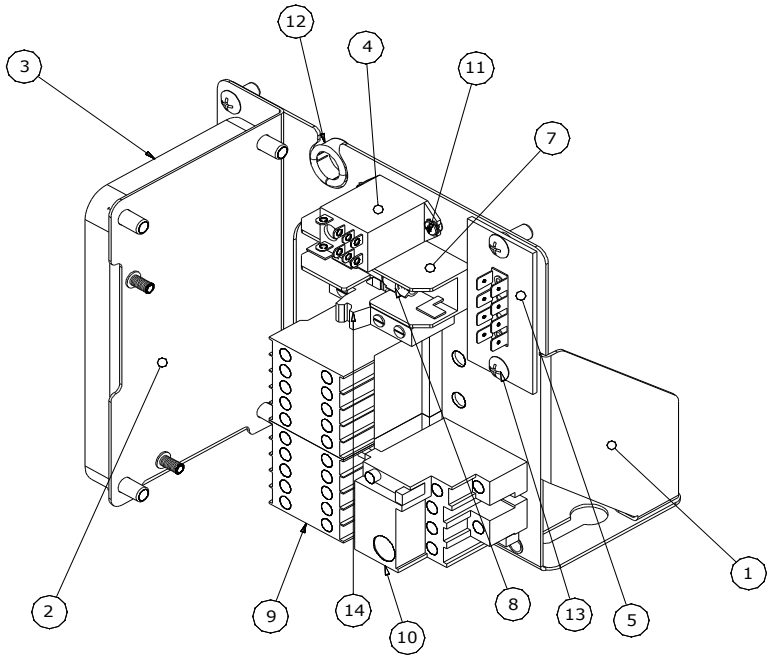
Problem: Machine doesn't drain when "OFF/DRAIN" switch is pressed.
1. Drain solenoid clogged. Remove obstruction.
2. Defective motor or motor start relay. Replace.
3. Defective drain valve. Replace.

Problem: No indication of pressure.
1. Water turned off. Turn water on.
2. Pressure gauge defective. Replace pressure gauge.

CONTROL PANEL WELDMENT ASSEMBLIES

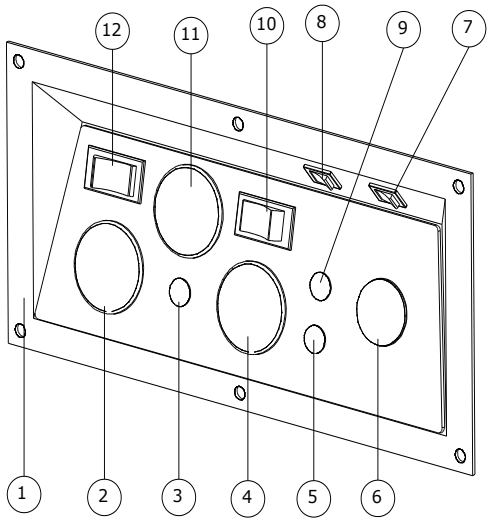

Avenger HT Complete Control Panel Assembly
Complete Control Panel Weldment Assembly Avenger HT 05700-003-31-47
Bushing, Snap 05975-003-35-21
Relay, 240V 05945-111-89-75
Screw, 6-32 X 3/8" 05305-002-25-91
Screw, 10-32 X 1" (4 Per Ass'y) 05305-002-19-42
Control Panel Weldment 05700-003-31-48
Locknut, 10-24 w/Nylon Insert (1 Per Ass'y) 05310-373-01-00
P Clamp 1/4" 05975-002-61-42
Locknut, 6-32 w/Nylon Insert 05310-373-03-00
Screw, 10-32 X 3/8" 05305-173-12-00
Timer Mounting Bracket Avenger HT Only 05700-003-36-05
Universal Timer 05945-003-33-09
*Fused Universal Timer 05945-003-75-23
Contactor, 240V (2 Per Avenger HT Asm.) 05945-002-74-20
Avenger LT Complete Control Panel Assembly
Complete Control Panel Weldment Assembly Avenger LT 05700-003-7523
Unless specified here, other components are the same as above.
Optional Heater Relay, 20A 05945-002-90-51
Control Panel Weldment 05700-003-46-73
Universal Timer 05945-003-33-09
*Fused Universal Timer 05945-003-75-23
Pump Motor Contactor, 110V (1 per Avenger LT Asm.) 05945-109-05-69

AVENGER HT 480V CONTROL PANEL ASSEMBLY



Item	QTY	Description	Part Number
1	1	ELECTRICAL PANEL WELDMENT	05700-003-37-46
2	1	TIMER, BRACKET ASSEMBLY	05700-003-36-05
3	1	TIMER, UNIVERSAL	05945-003-33-09
	*1 1 1 1	FUSED UNIVERSAL TIMER (ALTERNATE CONSTRUCTION) FUSE 9 WIRE HARNESS 10 WIRE HARNESS	05945-003-75-23 05920-003-75-24 05999-003-75-81 5999-003-75-82
4	1	RELAY	05945-002-47-41
5	1	TERMINAL BOARD	05940-021-94-85
6	1	TRACK, TERMINAL BLOCK	05700-003-37-49
7	1	FUSE HOLDER	05920-011-72-89
8	1	FUSE, 1/4 AMP	05920-002-75-95
9	2	CONTACTOR	05945-111-60-07
10	1	OVERLOAD	05945-111-60-08
11	2	SCREW, 6-32 X 3/8" W/EXTERNAL T WASHER	05305-002-25-91
12	1	OPEN/CLOSED BUSHING, 7/8"	05975-003-35-21
13	6	SCREW, 10-32 X 3/8" LONG PHIL TRUSS HEAD	05305-173-12-00
14	2	END CLAMP	05950-111-60-30
15	1	TRANSFORMER (NOT SHOWN)	05950-011-50-70

CONTROL PANEL ASSEMBLY/KICK PANEL WELDMENT-AVENGER HT



Item	QTY	Description	Part Number
1	1 1 6	CONTROL PANEL DECAL, CONTROL PANEL LOCKNUT, 1/4" -20 S/S HEX W/NYLON INSERT	09330-003-31-66 09905-003-31-65 05310-374-01-00
2	1	THERMOMETER, 48" RINSE	06685-111-68-48
3	1	LIGHT, AMBER	05945-111-44-44
4	1	THERMOMETER, 96" WASH	06685-111-68-49
5	1	LIGHT, RED	05945-111-44-45
6	1	WINDOW PLUG	05975-003-31-72
7	1	SWITCH, RINSE AID	05930-011-49-54
8	1	SWITCH, DETERGENT	05930-011-49-54
9	1	LIGHT, GREEN	05945-111-44-43
10	1	SWITCH, ON-OFF	05930-301-49-00
11	1 1 1	GAUGE, 0-100 PSI WITH GREEN ZONE BELL ADAPTER, 1/4 NPT X 1/8 FNPT HOSE, PRESSURE GAUGE	06680-011-86-42 04730-003-33-02 04730-003-33-02
12	1	SWITCH, AUTO-MANUAL	05930-011-49-55
**	1	KICK PLATE WELDMENT (NOT SHOWN)	05700-003-32-91
**	1	COMPLETE CONTROL PANEL ASSEMBLY	05700-003-31-64
**	1	WIRE HARNESS	05999-003-34-61

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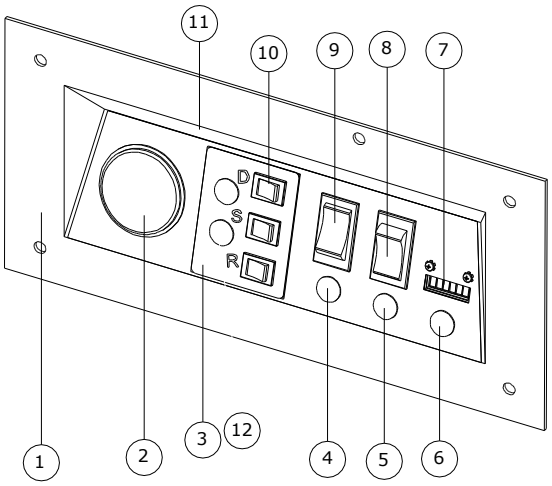
CONTROL PANEL ASSEMBLY/KICK PANEL WELDMENT-AVENGER LT

D-Detergent

S-Sanitizer

R-Rinse Aid



Item	QTY	Description	Part Number
1	1 1 6	CONTROL PANEL DECAL, CONTROL PANEL LOCKNUT, 1/4" -20 S/S HEX W/NYLON INSERT	09330-041-73-90 09905-003-31-95 05310-374-01-00
2	1	THERMOMETER, 48" RINSE	06685-111-68-48
3	1 1 1	PLATE, SWITCH MOUNTING DECAL, PRIME SWITCH LOCKNUT, 6-32 HEX W/NYLON INSERT	05700-011-80-40 09905-011-49-52 05310-373-03-00
4	1	LIGHT, RED	05945-111-44-45
5	1	LIGHT, AMBER	05945-111-44-44
6	1	LIGHT, GREEN	05945-111-44-43
7	1 2	COUNTER, 115V SCREW, 4-40 X 1/4" PHILLIPS PAN HEAD	05990-111-35-38 05305-002-32-38
8	1	SWITCH, AUTO-MANUAL	05930-301-49-00
9	1	SWITCH, ON-OFF	05930-011-49-55
10	3	SWITCH, PERIPUMP	05930-011-49-54
11	2 2	BUZZER, 115V (NOT SHOWN) SCREW, 6-32 X 3/8 PAN PHILLIPS HEAD	05990-003-36-12 05305-171-07-00
12	1	LIGHT, RED	05945-504-07-18
**	1	KICK PLATE WELDMENT (NOT SHOWN)	05700-003-53-14
**	1	COMPLETE CONTROL PANEL ASSEMBLY	05700-003-34-23
**	1	WIRE HARNESS	05999-003-34-62

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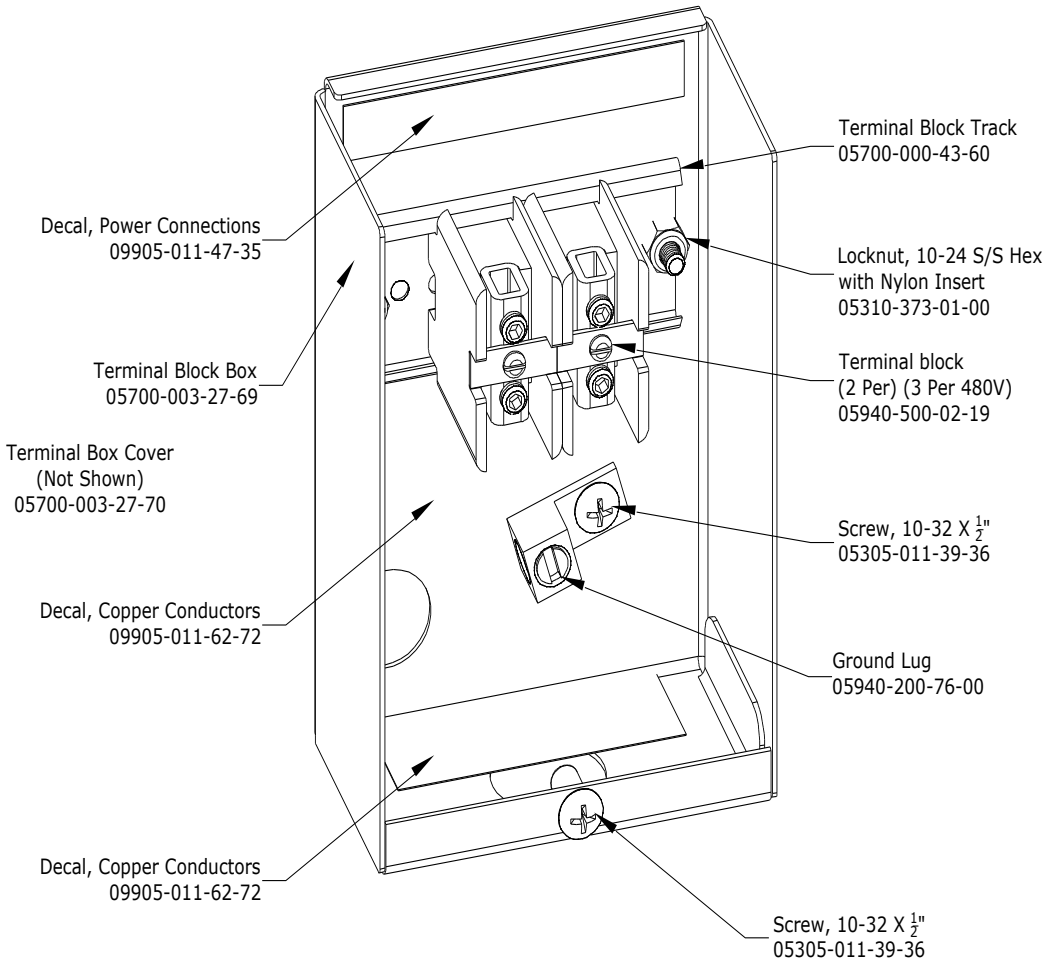
TERMINAL BLOCK BOX ASSEMBLY

(LOCATED AT LOWER LEFT REAR CORNER OF MACHINE)



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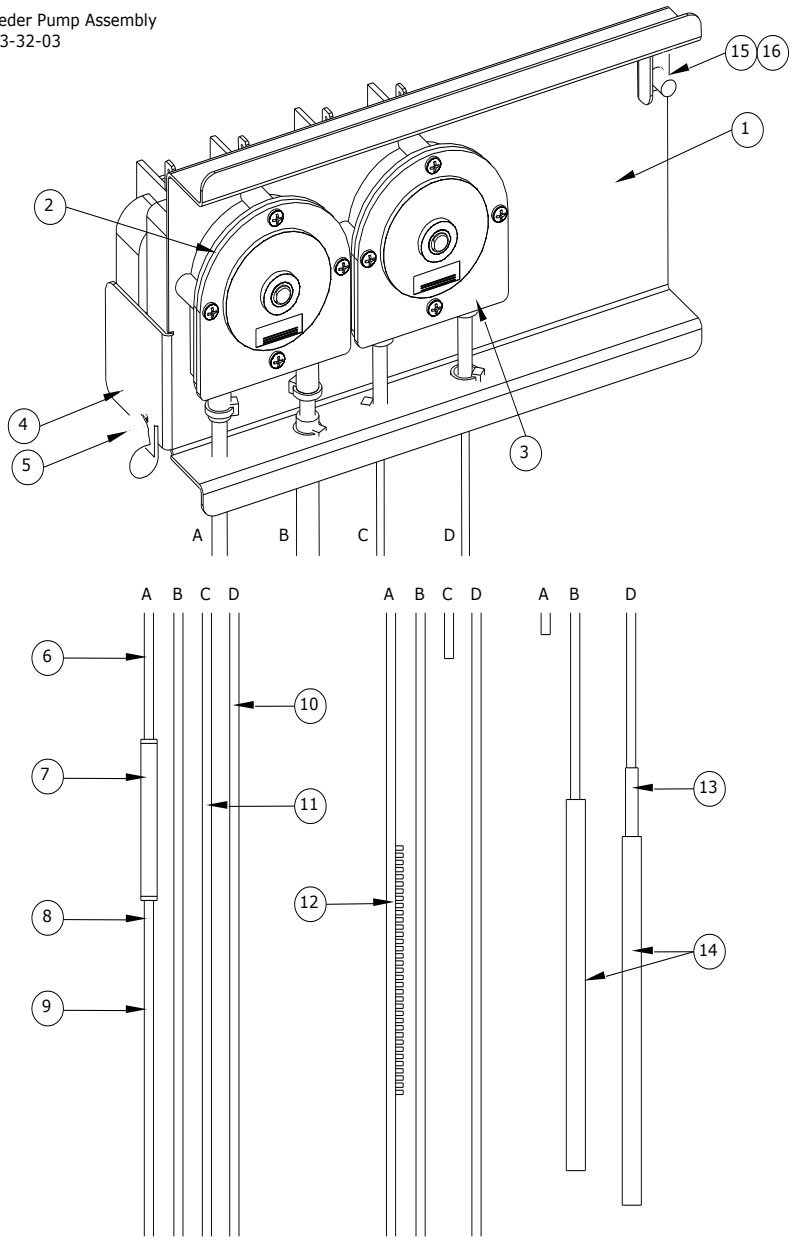
AVENGER HT CHEMICAL FEEDER PUMP ASSEMBLY

Complete Chemical Feeder Pump Assembly
05700-003-32-03



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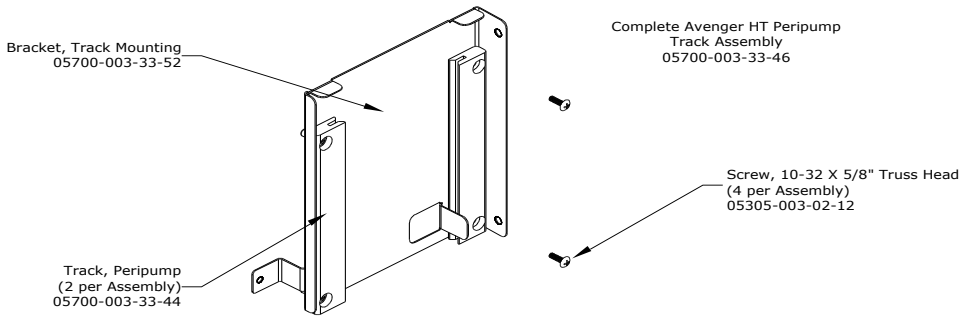
AVENGER HT CHEMICAL FEEDER PUMP ASSEMBLY (CONTINUED)

Item	QTY	Description	Part Number
1	1	Peri Pump Weldment	05700-003-33-48
2	1	Detergent Feeder Pump (Red Roller) 36 RPM, 240V	05700-002-78-74
2	1	Motor, 36 RPM 115V (480V Machine)	04320-111-35-14
3	1	Rinse Aid Feeder Pump (Black Roller), 14 RPM 240V	05700-002-72-48
3	1	Motor, 14 RPM 115V (480V Machine)	04320-111-35-13
4	2	Nylon, Loop Strap	04320-002-71-22
5	2	Locknut, 6-32 with Nylon Insert	05310-373-03-00
6	1	Red Tube 1/4" X 14-1/2"	05700-003-33-59
7	1	Tube, Tygoprene 3/16" X 8"	05700-003-22-89
8	1	Red Tube 1/4" X 72"	05700-003-33-58
9	1	Red Tube 1/4" X 120"	05700-003-33-57
10	1	1/8" X 120" Clear Tube	05700-003-33-61
11	1	1/8" X 93" Clear Tube	05700-003-33-60
12	1	12" Long Black Sleeve	05700-003-33-63
13	1	Blue Tube, 1/4" X 22"	05700-001-86-78
14	2	Chemical Tube Stiffener	05700-002-66-49
15	1	Stop Bracket	05700-003-36-24
16	2	Screw, 10-32 X 3/8"	05305-173-12-00



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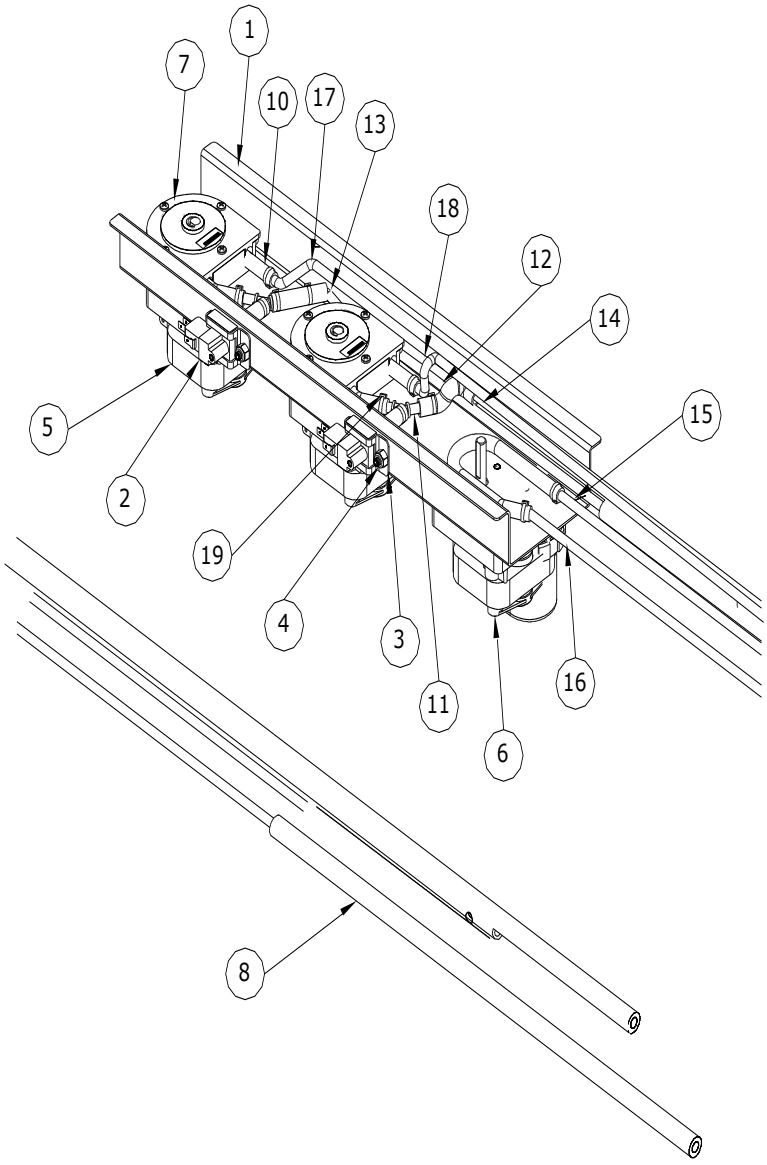
AVENGER LT CHEMICAL FEEDER PUMP ASSEMBLY



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AVENGER LT CHEMICAL FEEDER PUMP ASSEMBLY (CONTINUED)

Item	QTY	Description	Part Number
1	1	Peri Pump Plate Channel	05700-003-53-25
2	2	Switch, Pressure	06685-003-36-13
3	2	Bracket, Pressure Switch	05700-003-53-03
4	2	Locknut, 10-24 with Nylon Insert	05310-373-01-00
5	2	Motor, 36 RPM 115V	04320-111-35-14
6	1	Motor, 14 RPM 115V	04320-111-35-13
7	2	Peri Pump Kit (Black Roller)	04320-002-87-63
8	3	Chemical Tube Stiffener	05700-002-66-49
9	1	Peri Pump Kit (White Roller) Not Shown	04320-002-83-90
10	3	Tube, Tygoprene	05700-003-22-89
11	1	Wye, 1/4” Barbed PVDF	04730-003-36-14
12	4	5/16 ID Clear Tube	05700-003-53-26
13	1	Red Tube 1/4” X 100”	05700-003-03-45
14	1	White Tiber 1/4” X 100”	05700-003-20-67
15	1	Blue Tube, 1/4” X 48”	05700-002-62-11
16	1	Blue Tube, 1/4” X 100”	05700-003-20-68
17	1	Red Tube, 1/4” X 48”	05700-002-62-12
18	1	White Tube, 1/4” X 48”	05700-002-62-13
19	-	Tye Wrap	05945-602-01-16

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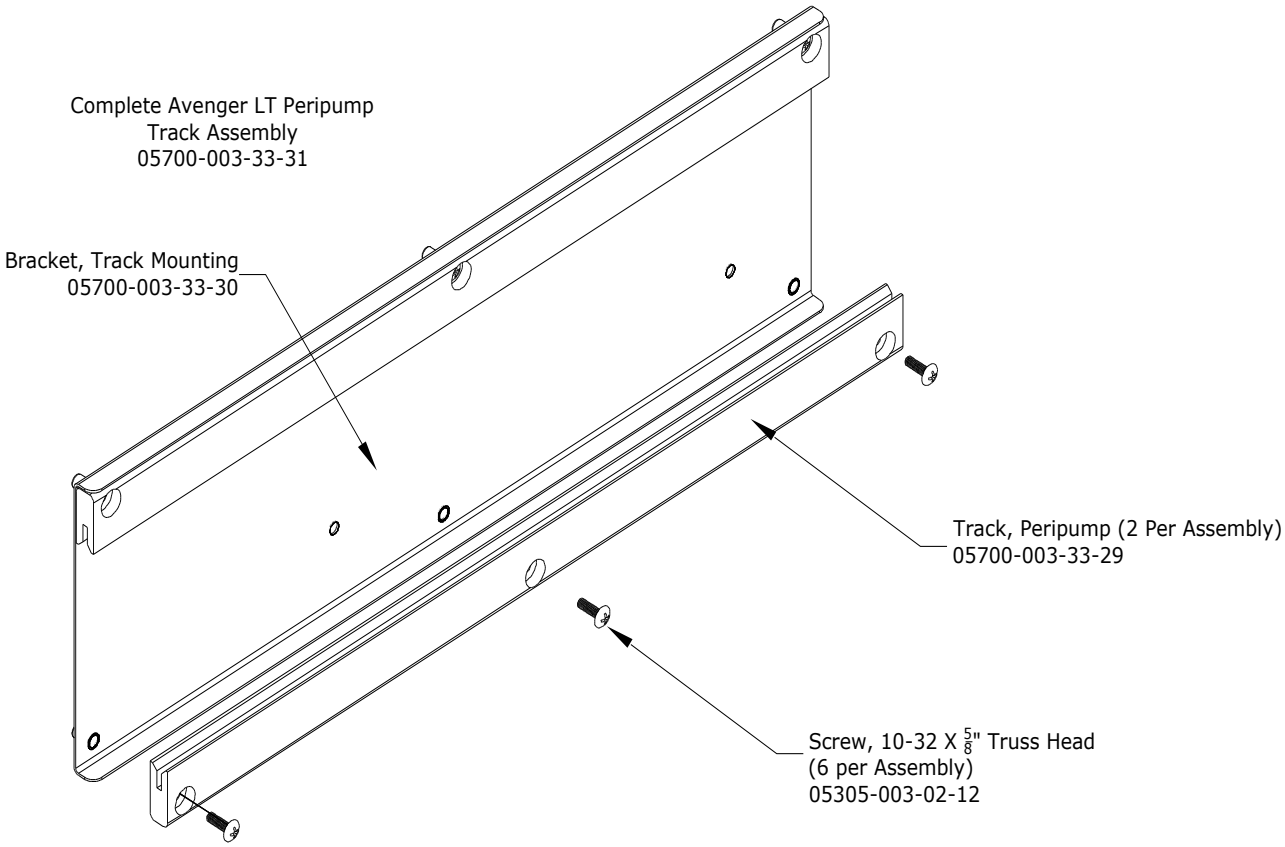
AVENGER LT CHEMICAL FEEDER PUMP ASSEMBLY (CONTINUED)



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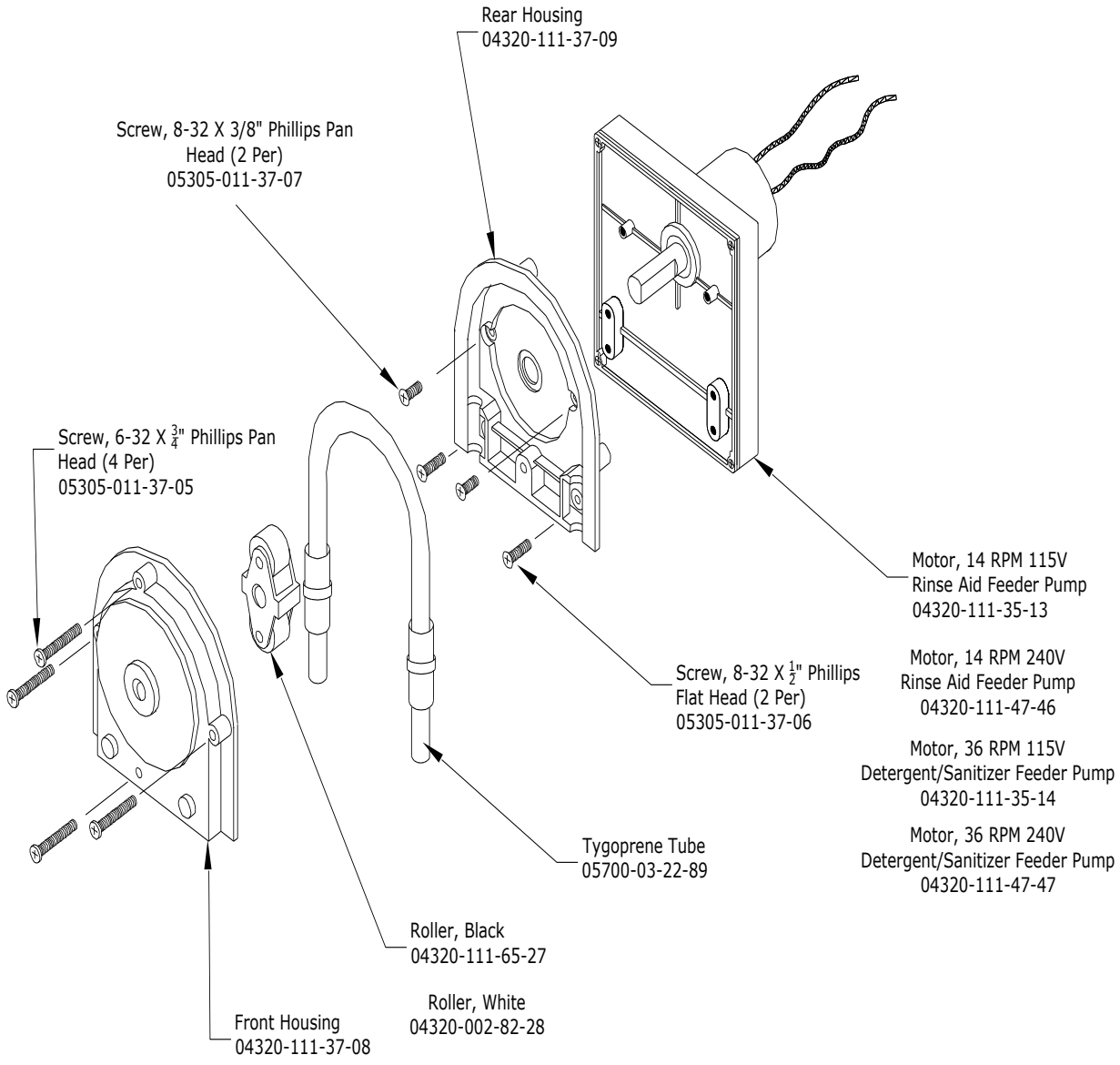
CHEMICAL FEEDER PUMP COMPONENTS



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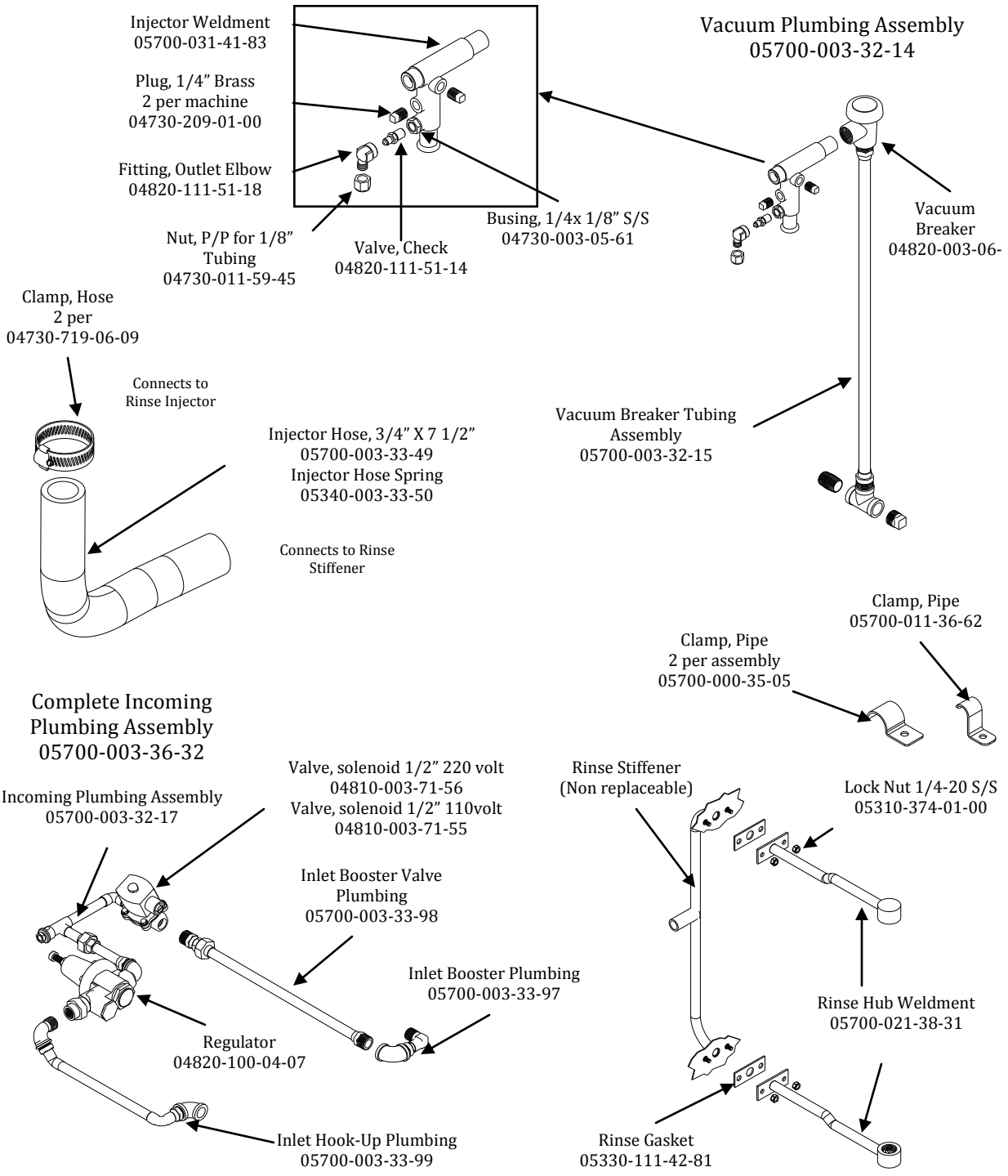
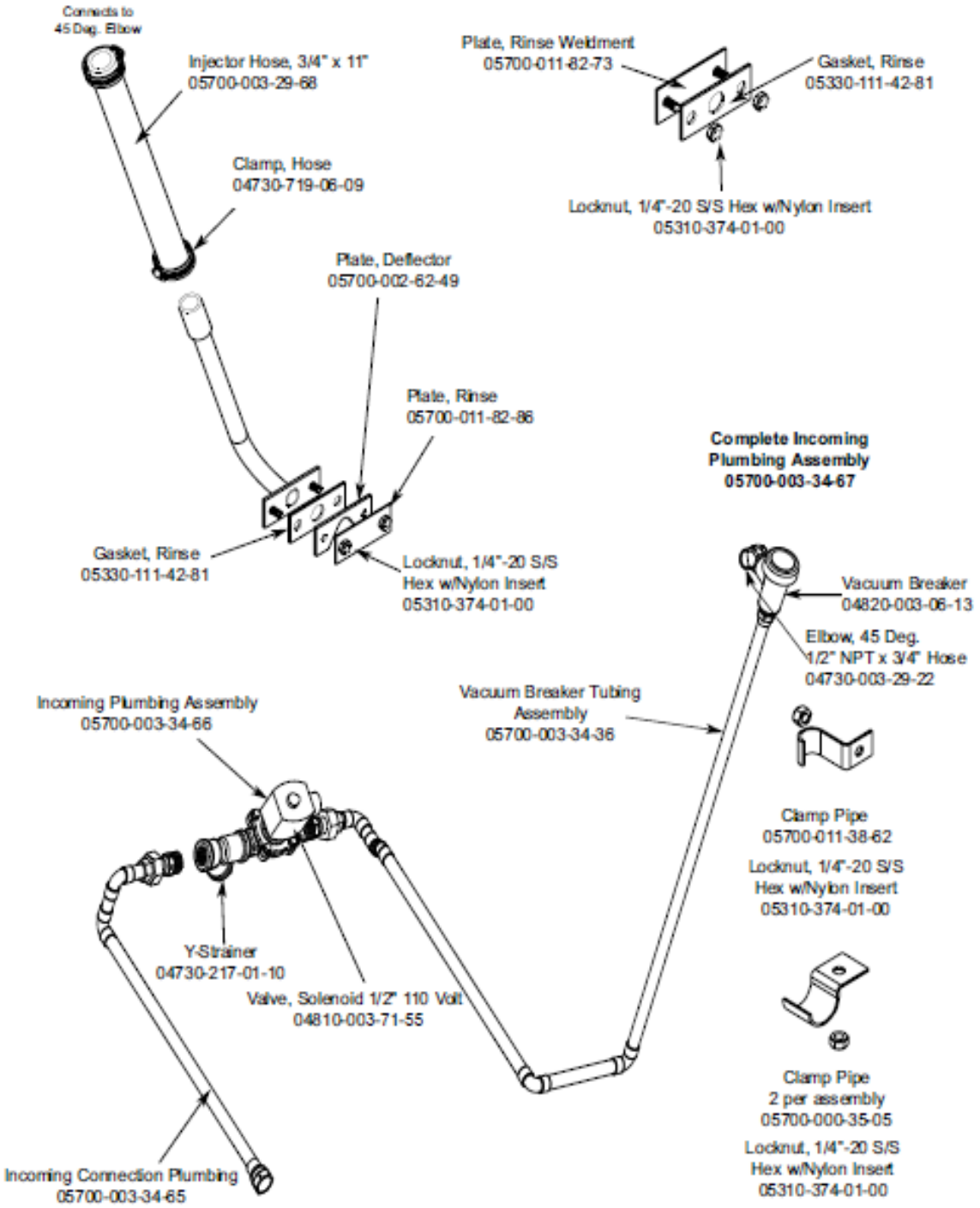
AVENGER HT PLUMBING ASSEMBLIES



Page Created:04-01-2011
Revised: 03-11-2013

AVENGER LT PLUMBING ASSEMBLIES



Page Created: 04-06-2011
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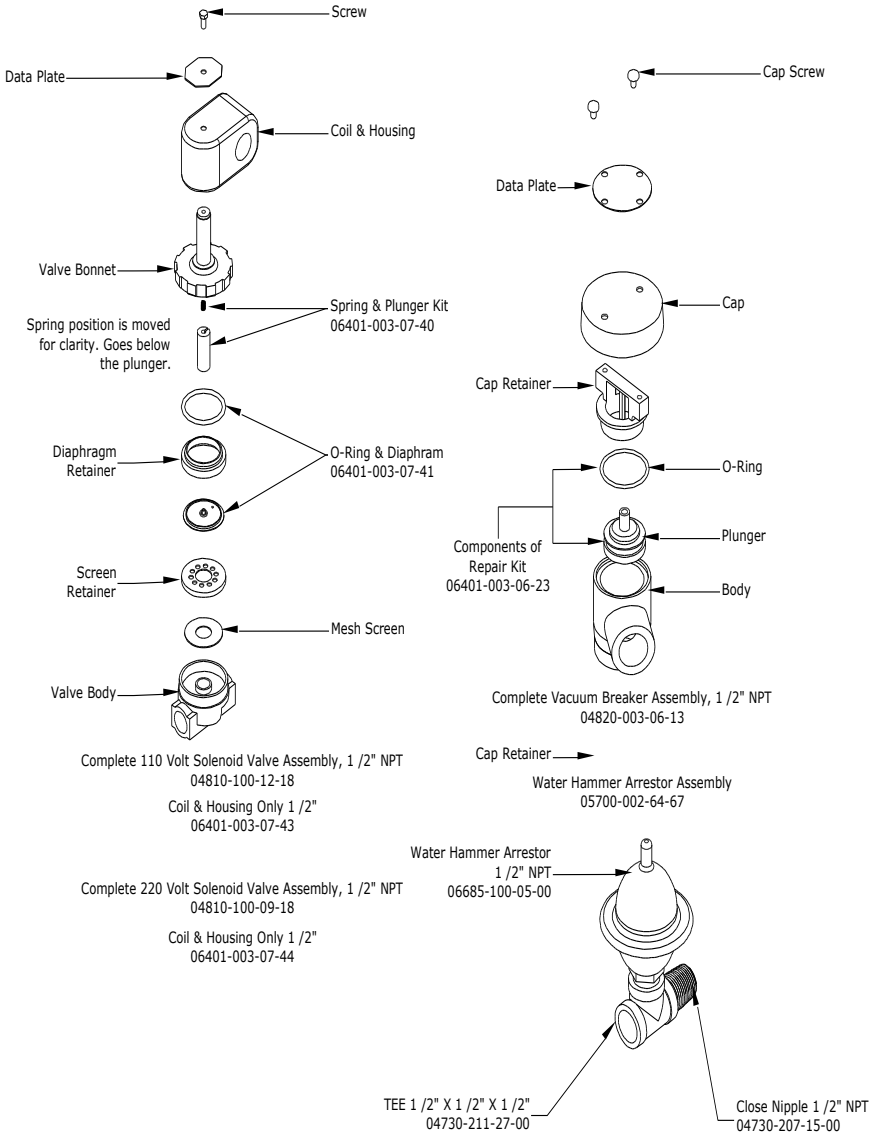
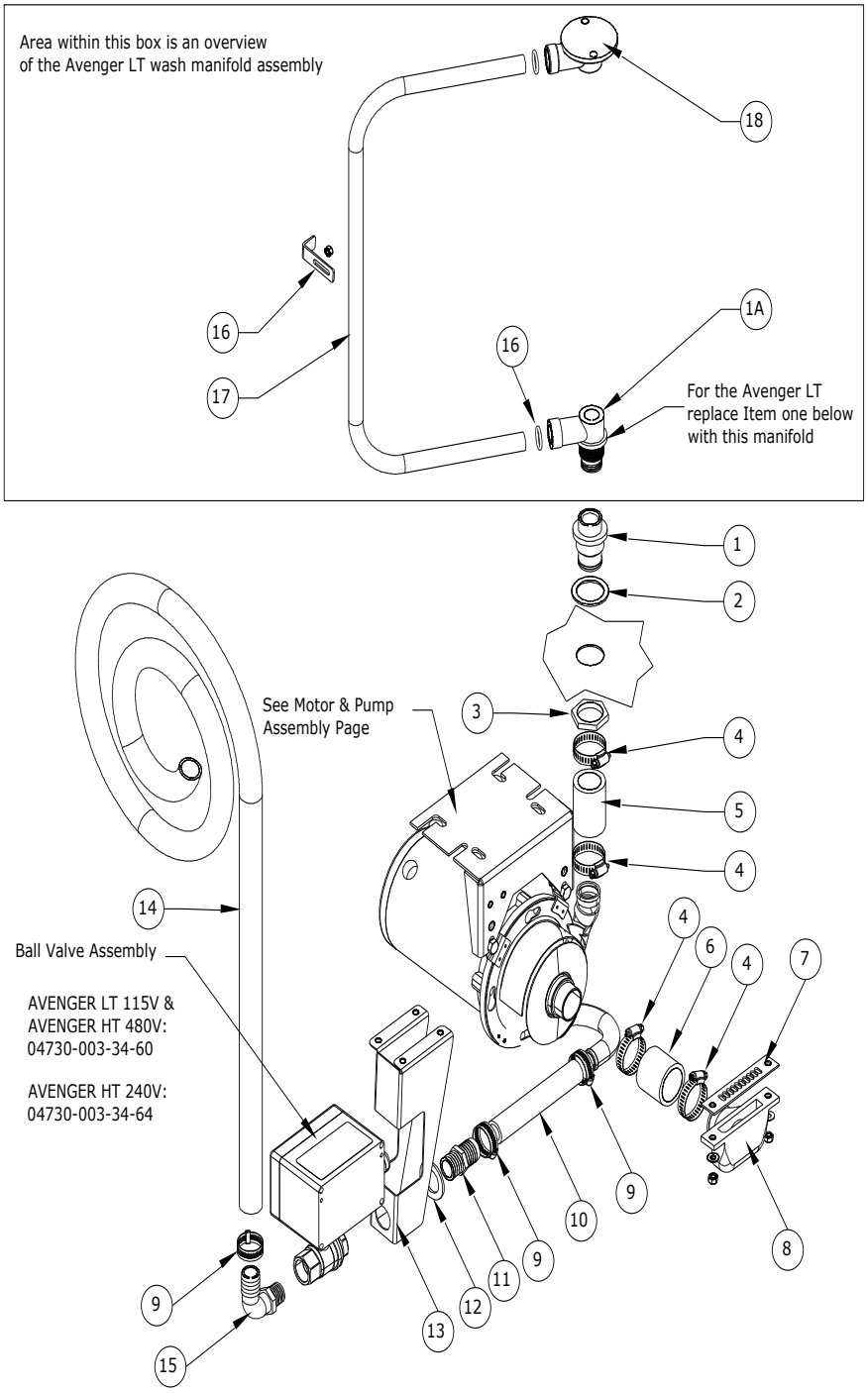
RINSE SOLENOID VALVE & VACUUM BREAKER REPAIR PARTS KIT/WATER HAMMER KIT OPTION



Page Created: 04-06-2011
Revised: 03-11-2013

WASH MOTOR/DRAIN PLUMBING/AVENGER LT WASH MANIFOLD ASSEMBLY



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WASH MOTOR/DRAIN PLUMBING/AVENGER LT WASH MANIFOLD ASSEMBLY

Item	QTY	Description	Part Number
1	1	HUB, DISCHARGE MACHINED (AVENGER HT SHOWN)	05700-021-37-90
1A	1	LOWER, WASH MANIFOLD (AVENGER LT)	05700-021-52-80
2	1	GASKET, MANIFOLD	05330-200-23-00
3	1	NUT, JAM 1-1/2"-12 NPT	05700-000-86-23
4	4	HOSE CLAMP, 1-5/16"-2 1/4" #28	04730-719-01-37
5	1	HOSE, 1-1/4" X 2-1/4" REINFORCED	05700-011-44-48
6	1	HOSE, BOTTOM MANIFOLD PUMP	05700-001-22-92
7	1	GASKET, SUCTION ADAPTOR	05330-003-32-82
8	1 2 2	CASTING, SUCTION ADAPTOR WASHER, S/S 1/4"-20 I.D. LOCKNUT, 1/4"-20 S/S	09515-031-39-86 05311-174-01-00 05310-374-01-00
9	3	CLAMP, 3/16" TO 1-1/2"	04730-719-06-09
10	1	HOSE, 8" STRAIGHT DRAIN	04720-003-27-95
11	1	HOSEBARB, 1" X 3/4" NPT POLYPROPYLENE	04730-011-65-86
12	1	SPACER, DRAIN VALVE	05700-003-31-93
13	1	BRACKET, DRAIN VALVE SUPPORT	05700-003-31-74
14	1	HOSE, 1" I.D. X TEN FEET LONG	05700-011-39-72
15	1	HOSEBARB, 90 DEGREE 1" X 3/4" NPT	04730-011-65-87
16	2	O-RING, MANIFOLD	05330-111-35-15
17	1	TUBE, WASH MANIFOLD	05700-002-13-75
18	1	UPPER WASH MANIFOLD	05700-031-34-82
19	1 1	BRACKET, MANIFOLD TUBE POSITIONING LOCKNUT, 1/4"-20 S/S	05700-011-34-63 05310-374-01-00

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MOTOR & PUMP ASSEMBLY

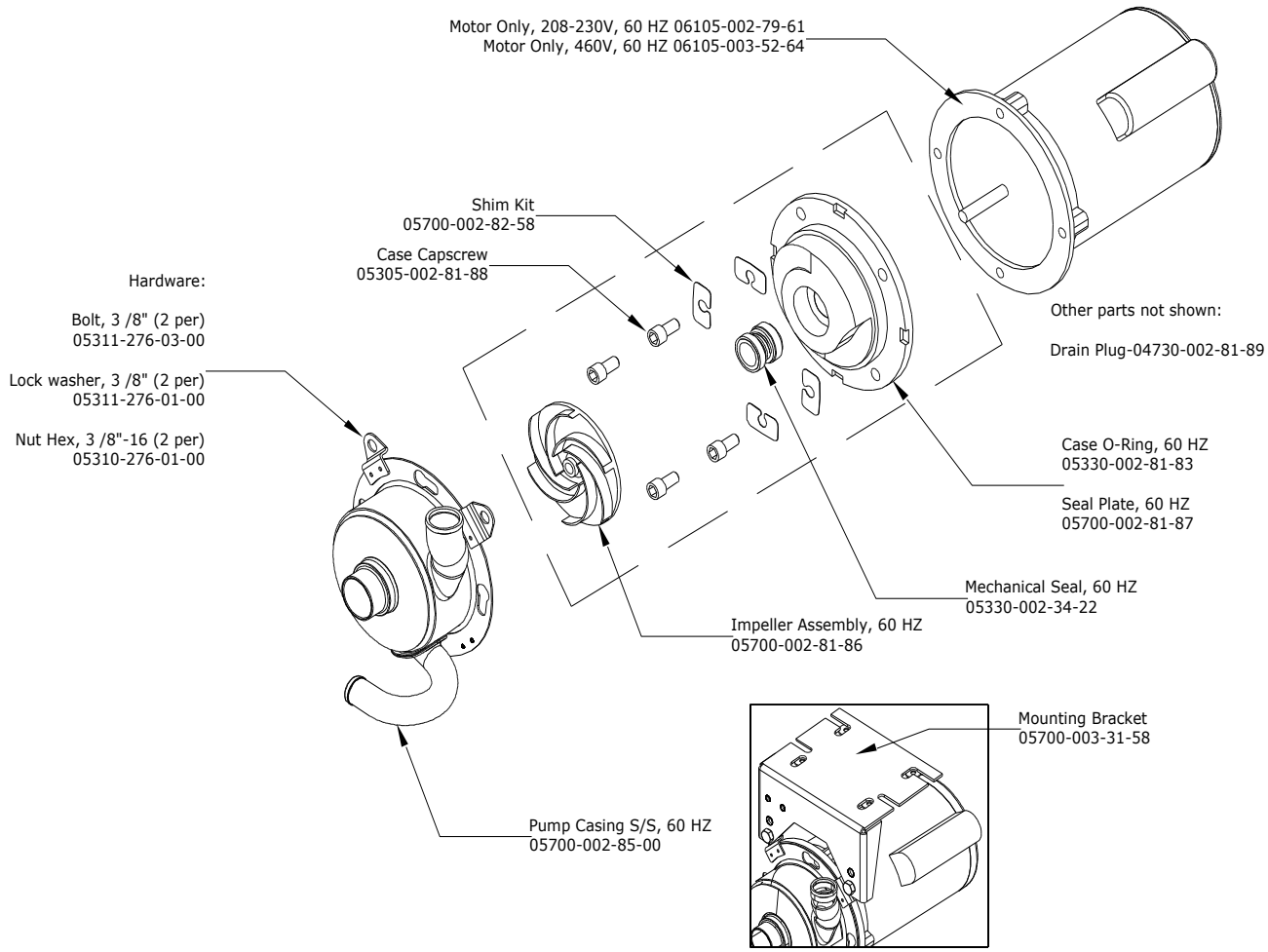
Complete Pump & Motor Assembly, 60 HZ With Bracket
05700-003-31-57

Complete Pump & Motor Assembly, 480V 60 HZ With Bracket
05700-003-52-80

Complete Pump & Motor Assembly, 60 HZ No Bracket
06105-002-72-75

Complete Pump & Motor Assembly, 480V 60 HZ No Bracket
06105-003-52-78

Pump Only Assembly, 60 HZ
(Area indicated within box, Casing is included)
05700-002-79-50



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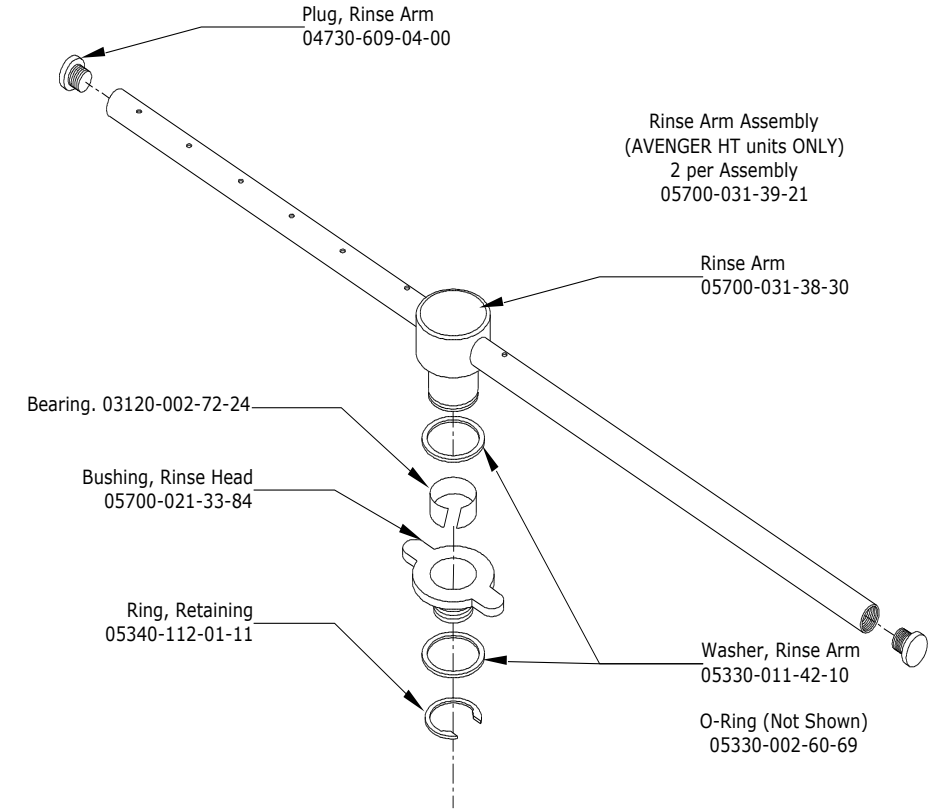
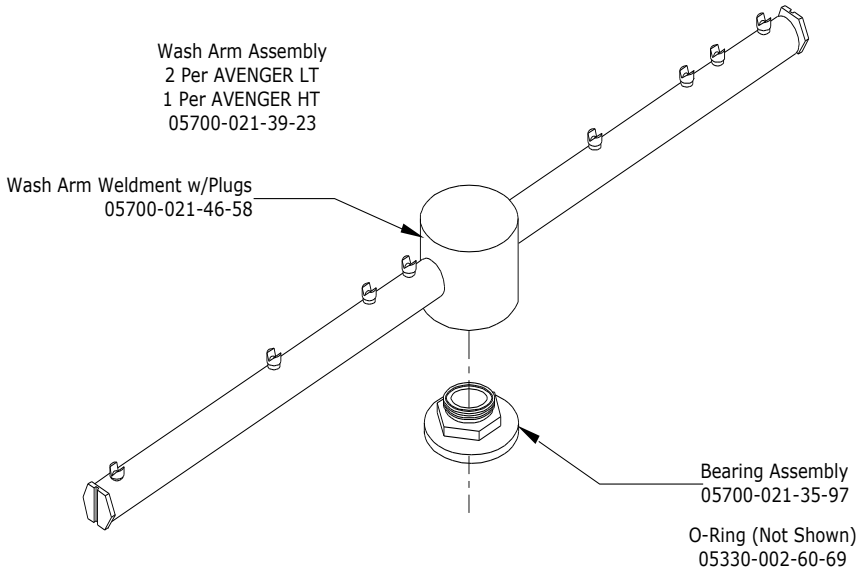
RINSE ARM & WASH ARM ASSEMBLIES





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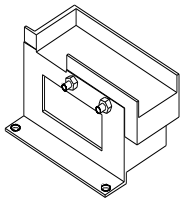
AVENGER HT THERMOSTAT & RINSE TANK ASSEMBLY



Thermostat
05930-003-06-48

Complete Rinse Tank Assembly
(AVENGER HT 208-230V)
05700-003-31-94

Complete Rinse Tank Assembly
(AVENGER HT 480V)
05700-003-37-78

Rinse Tank Weldment
05700-003-31-95

Fitting, 1 /4" Imperial Brass
05310-924-02-05

Heater:
208-230 Volt 04540-111-43-21
480 Volt 04540-002-29-82

Locknut, 1 /4"-20 S/S
Hex with Nylon Insert
05310-374-01-00

Gasket, Heater
05330-011-47-79

Lock Washer, 5 /16" Split
05311-275-01-00

Nut, 5 /16"-18 S/S Hex
05310-275-01-00

Dielectric Cover
05700-001-40-50

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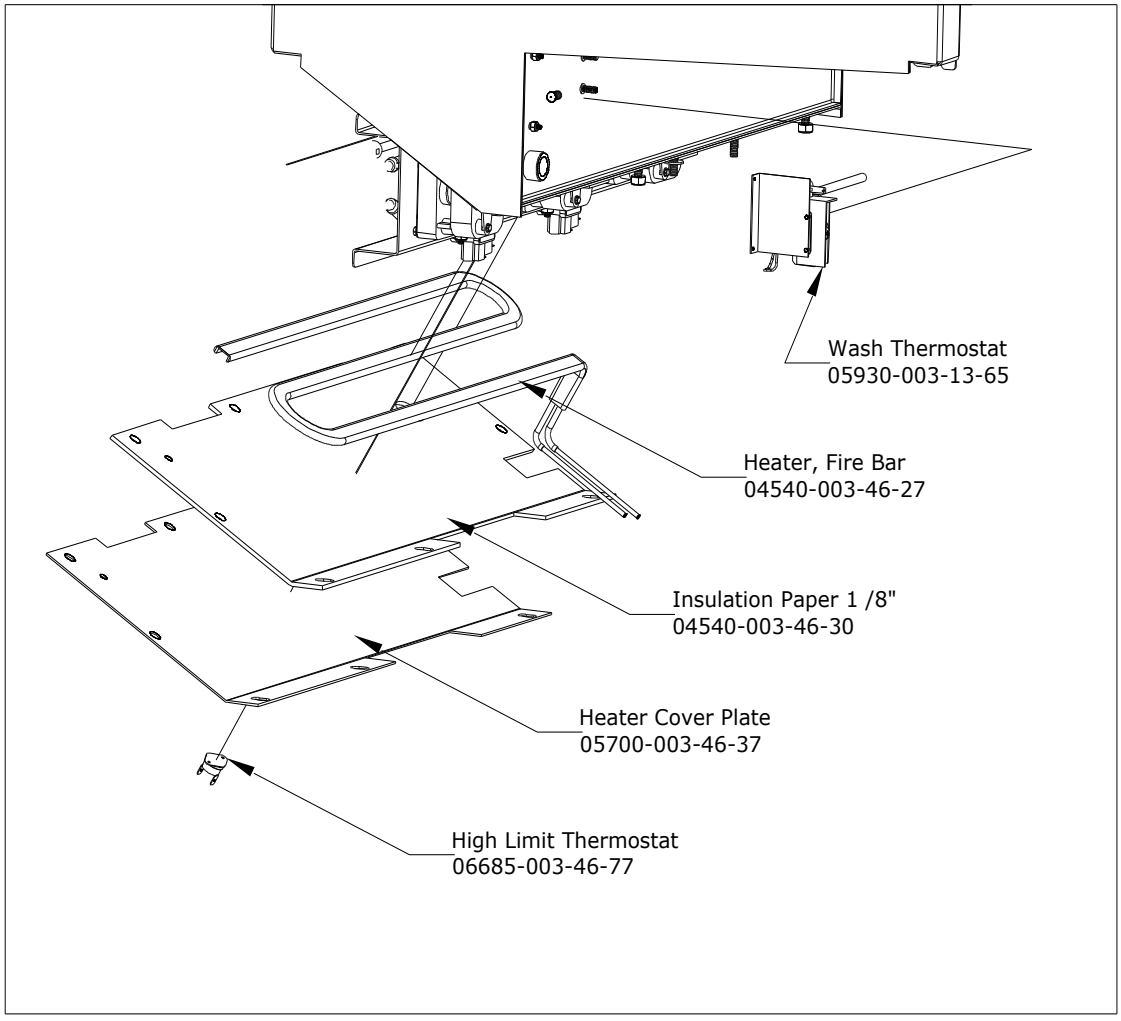
AVENGER LT OPTIONAL THERMOSTAT & HEATER COMPONENTS



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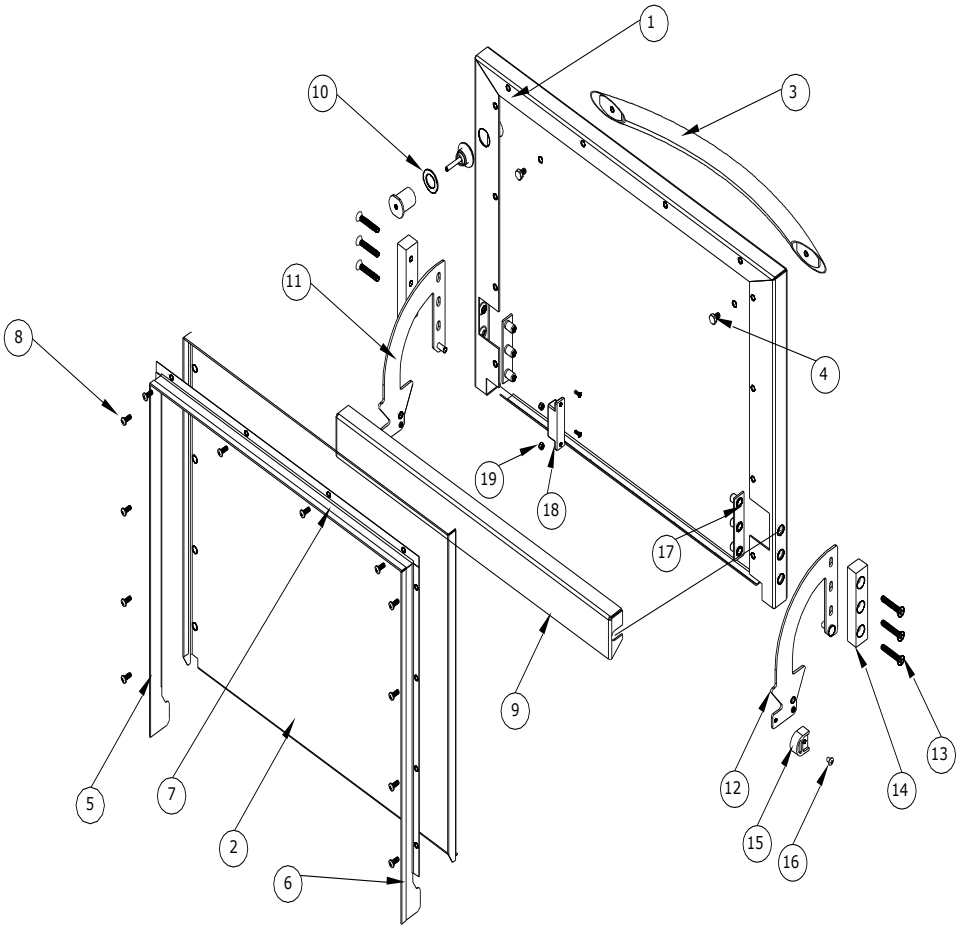
AVENGER DOOR ASSEMBLY



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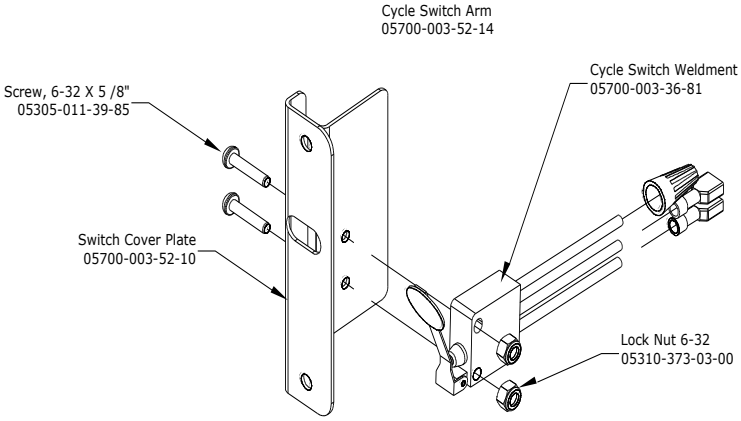
AVENGER DOOR ASSEMBLY (CONTINUED)

Item	QTY	Description	Part Number
1	1	OUTER DOOR WELDMENT	05700-003-33-37
2	1	INNER DOOR	05700-003-33-21
3	1	DOOR HANDLE	05700-003-26-62
4	2	BOLT, 1/4" -20 X 3/8" LONG	05305-274-20-00
5	1	CHANNEL, RIGHT SEAL	05700-003-33-19
6	1	CHANNEL, LEFT SEAL	05700-003-33-20
7	1	CHANNEL, TOP SEAL	05700-003-33-22
8	12	SCREW, 10-32 X 1/2" PAN PHILLIPS HEAD	05305-011-44-52
9	1	BAFFLE, DOOR	05700-003-33-38
10	1	START SWITCH ASSEMBLY	05700-003-34-80
11	1	HINGE, RIGHT WELDMENT	05700-003-32-72
12	1	HINGE, LEFT WELDMENT	05700-003-32-71
13	6	SCREW, 1/4"-20 X 1/1/2" FLAT PHILLIPS HEAD	05305-011-44-50
14	2	HINGE SPACER	05700-003-33-42
15	2	STOP, DOOR HINGE	05700-003-32-55
16	2	SCREW, NUMBER 10 PAN HEAD 18-8 S/S X 1/2"	05305-173-01-00
17	2	RETAINING PLATE ASSEMBLY	05700-011-44-37
18	1	MAGNET, REED SWITCH	05930-002-68-53
19	2	LOCK NUT, 6-32 S/S HEX WITH NYLON INSERT	05310-373-03-00



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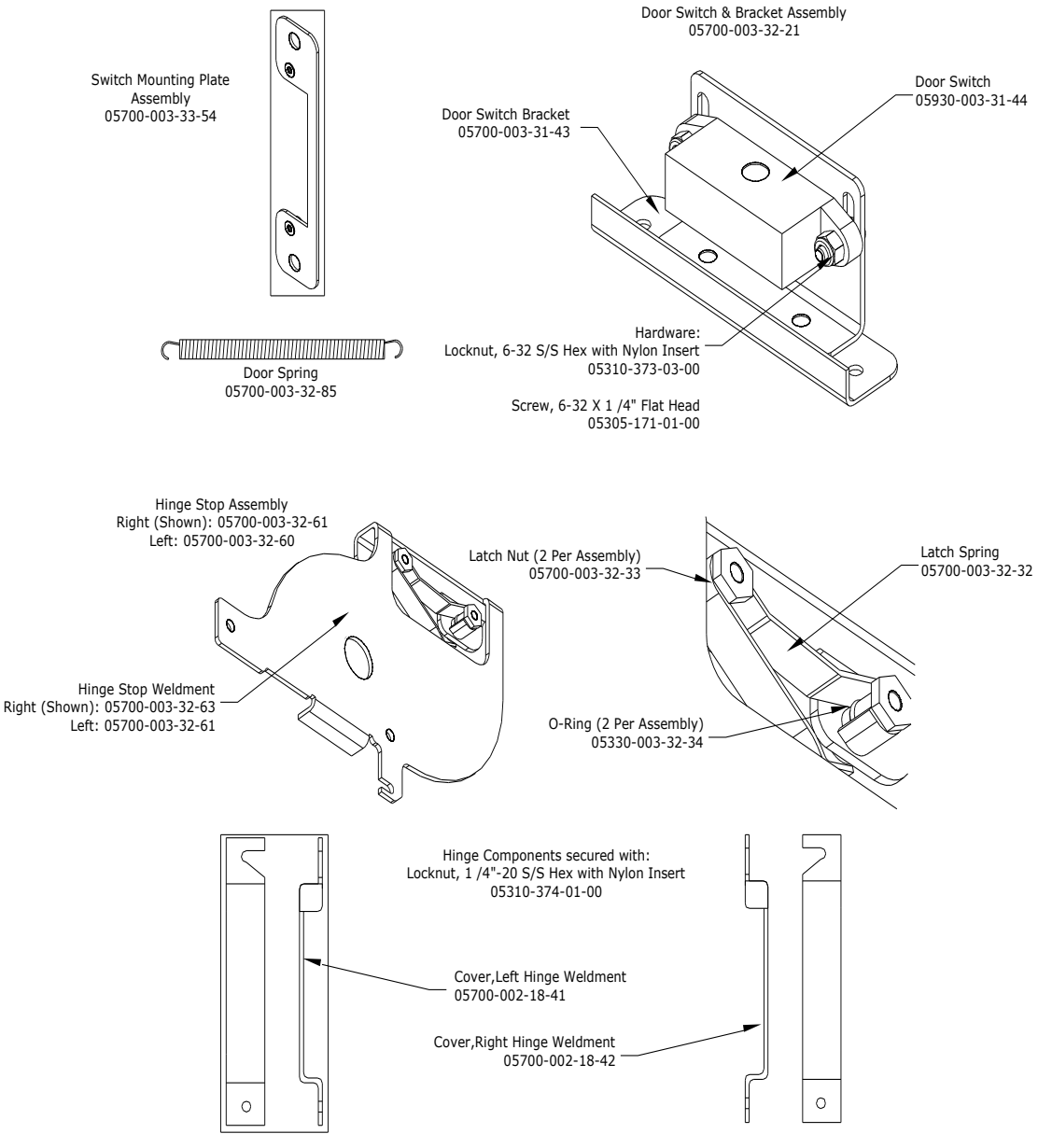
MISCELLANEOUS DOOR COMPONENTS



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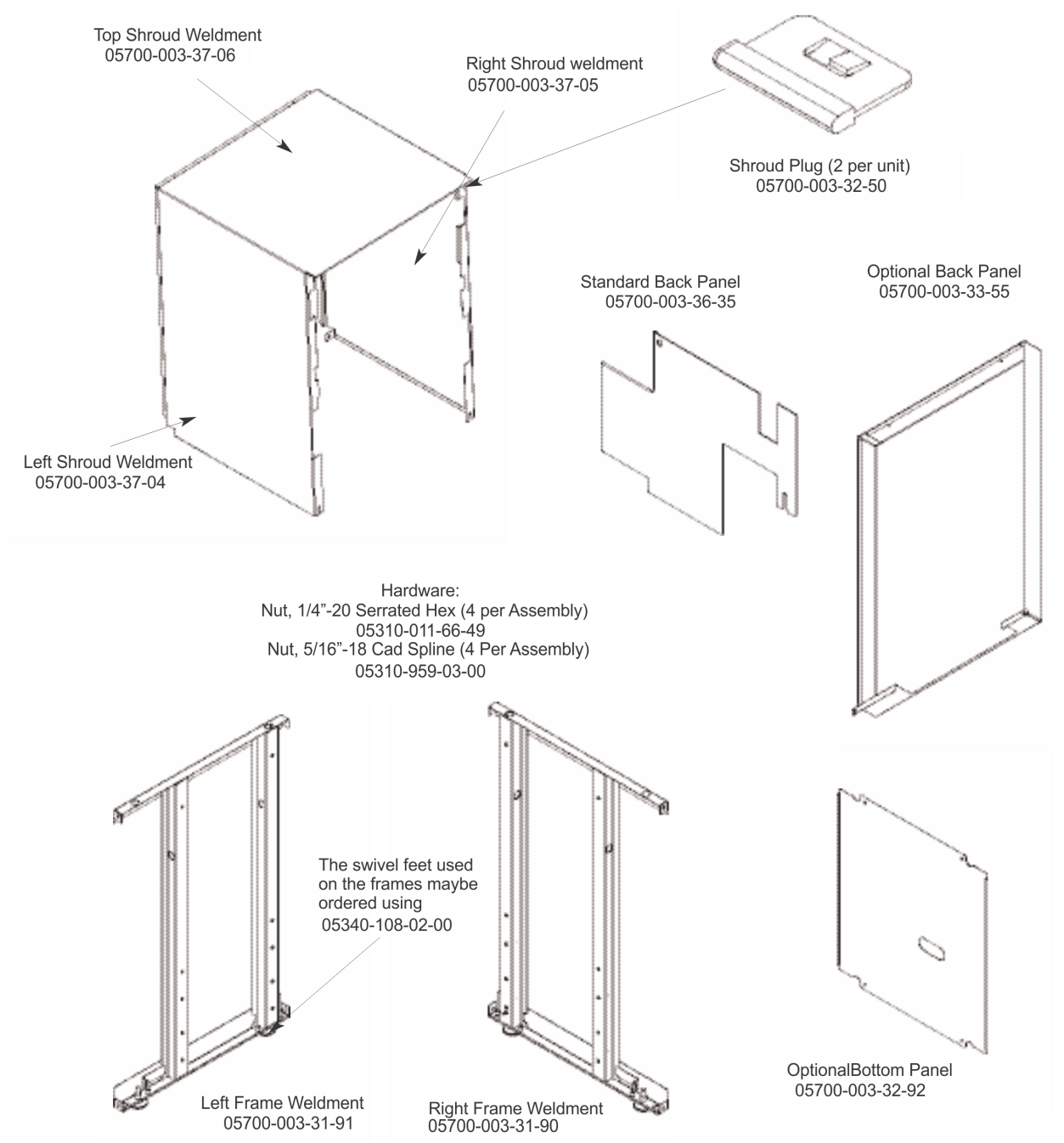
FRAME AND PANEL COMPONENTS



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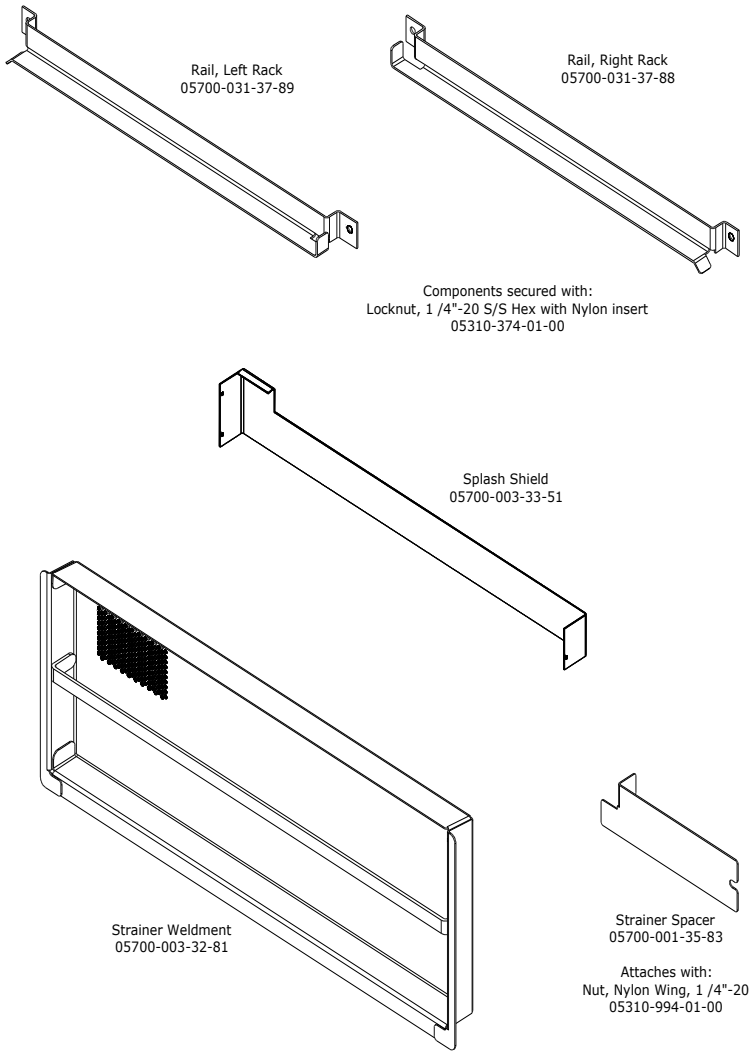
MISCELLANEOUS PARTS



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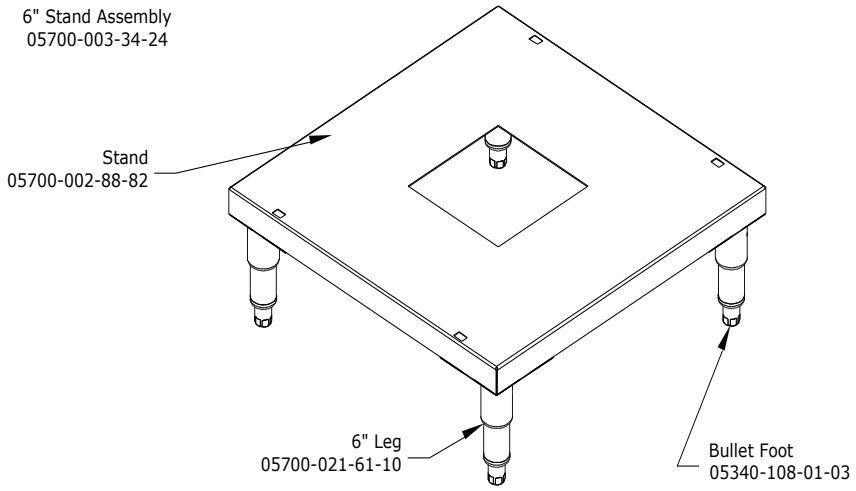
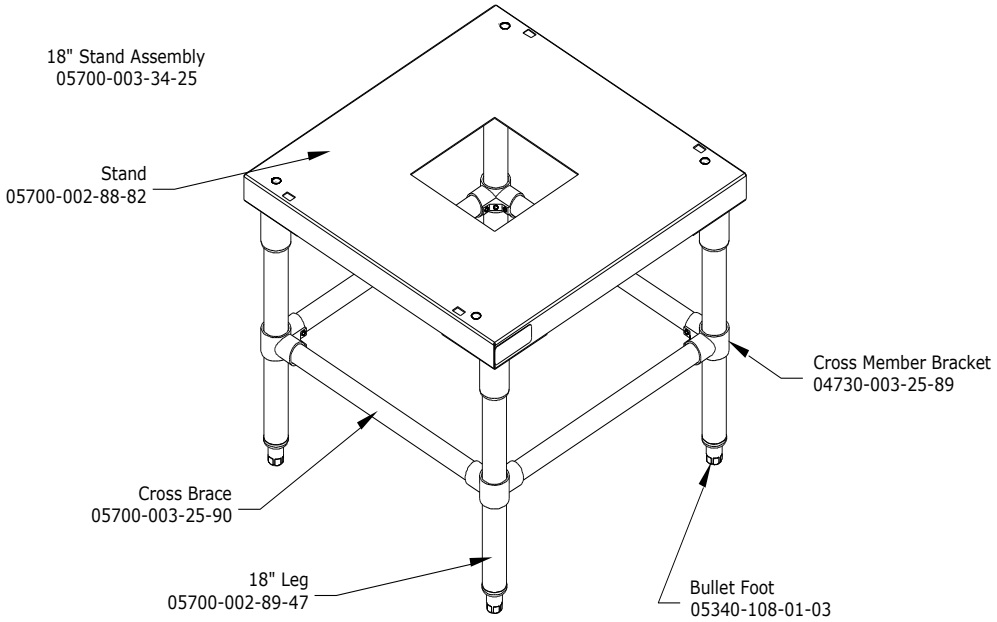
STANDS & COMPONENTS

INSTALLATION INSTRUCTIONS: To install the stand, first remove the adjustable feet from the machine. Place machine on table and use the square mounting holes to line up the machine. Re-insert the adjustable feet through bottom of table top and tighten to lock machine to table.





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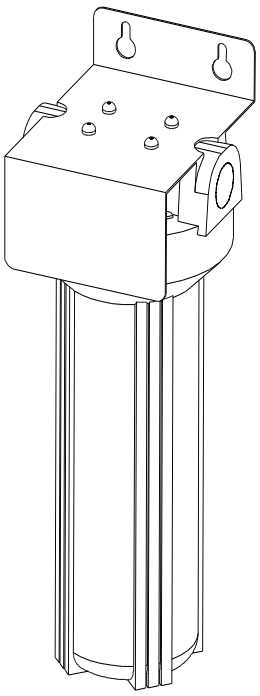
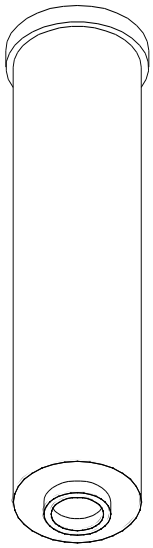
HTS-11 (SCALE PREVENTION & CORROSION CONTROL DEVICE)

Kleenware HTS-11 System
04730-003-28-03



The HTS-11 Must be installed vertically. The provided bracket is to be secured to the wall. Observe proper inlet/outlet water directions. Flow directions are molded into the top of the head. Line pressure should be released prior to changing cartridges. De-liming of equipment prior to installation is recommended but not required.

Replacement Cartridge
(Inspect at least every 6 months)
04730-003-28-04



Replacement Test Strip
06401-003-28-06

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AVENGER GO BOX KIT

A GO Box is a kit of the most needed parts for a particular model or model family to successfully effect a repair in the first call 90% or more of the time.

Item	QTY	Description	Part Number
1	1	RINSE THERMOSTAT	05930-003-06-48
2	1	CONTACTOR/HEATER	05945-002-74-20
3	1	PUMP SEAT	05330-002-34-22
4	1	PUMP GASKET O-RING	05330-002-81-83
5	1	DOOR SWITCH (REED)	05930-003-31-44
6	1	RELAY, 220-240 VOLT	05945-111-89-75
7	1	RELAY, 115 VOLT	05945-002-47-41
8	2	SWITCH, DET/RINSE AID PRIME	05930-011-49-54
9	2	SWITCH, ON/OFF	05930-301-49-00
10	2	SWITCH, AUTO/MANUAL	05930-011-49-55
11	1	FILL SOLENOID VALVE 1/2”	004810-100-09-18
12	1	VACUUM BREAKER	04820-003-06-13
13	1	TIMER, UNIVERSAL	05945-003-33-09
14	4	WASHER RINSE ARM	05330-011-42-10
15	2	RING, RETAINING	05340-112-01-11
16	2	BEARING ASSEMBLY, WASH ARM	05700-021-35-97
17	2	SQUEEZE TUBE, 3/16” ID X 3/8” OD	05700-111-35-29
18	2	SQUEEZE TUBE	05700-011-76-41
19*	1	PUMP & MOTOR ASSEMBLY	06105-002-72-75

* Special pricing when purchased with a Go BOX. Call for details.

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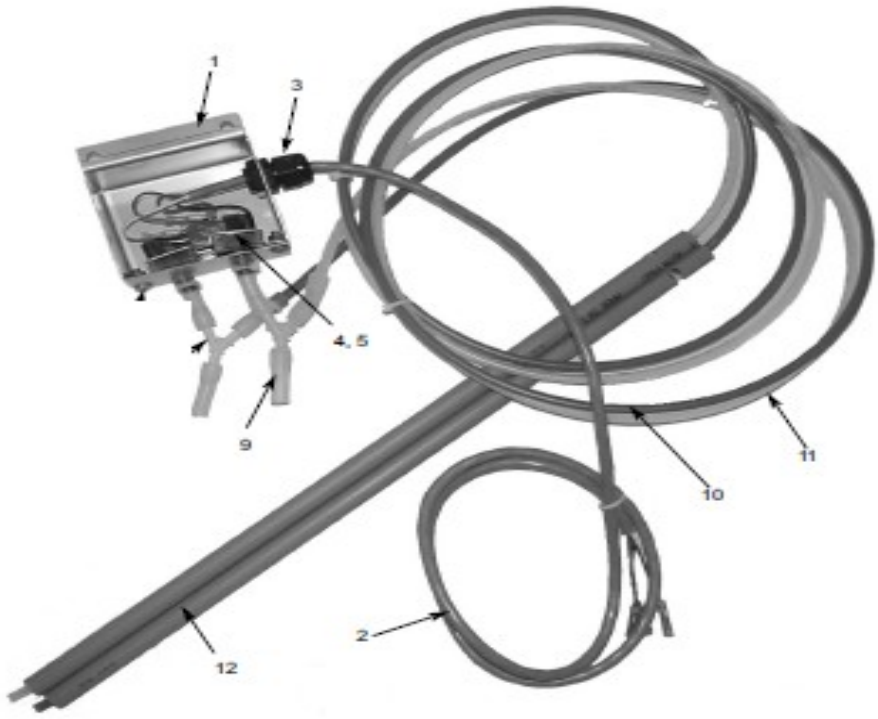
VACUUM SWITCH ASSEMBLY



Item	QTY	Description	Part Number
		COMPLETE ASSEMBLY	05700-003-55-98
1	1	BOX, VACUUM SWITCH	05700-003-55-96
2	1	HARNESS, VACUUM SWITCH	05700-003-55-97
3	1	FITTING, .231 X .394 LIQUID TIGHT	05975-011-49-03
4	2	SWITCH, PRESSURE	06685-003-36-13
5	2	BRACKET, PRESSURE SWITCH	05700-003-53-03
6	2	LOCKNUT, 10-32 S/S HEX WITH NYLON INSERT	05310-373-02-00
7	2	SCREW, 10-32 X 3/8" LONG	05305-173-12-00
8	2	WYE, 1/4" BARBED	04730-003-36-14
9	6	TUBING, TYGOPRENE 1" LONG	05700-003-53-26
10	2	TUBING, 1/4" ID X 100" LONG, RED	05700-003-03-45
11	2	TUBING, 1/4" ID X 100" LONG, CLEAR	05700-003-20-67
12	2	STIFFENER, CHEMICAL TUBE	05700-002-66-49
13	12	TIE, CABLE	05975-60201-16

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VACUUM SWITCH ASSEMBLY INSTALLATION

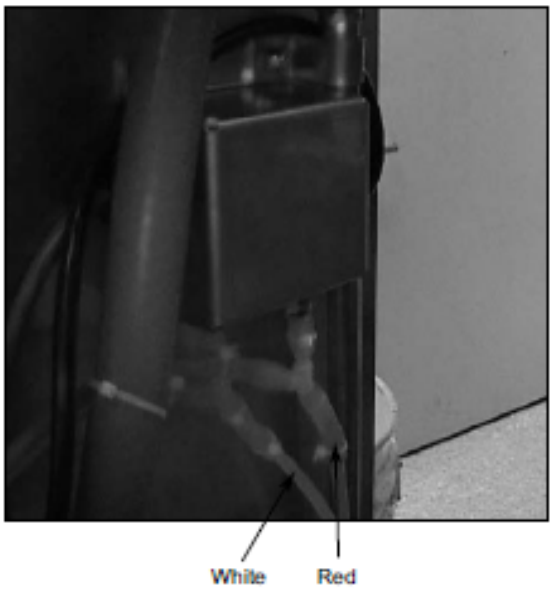
Back of machine showing use of existing mounting hardware for installation of vacuum switch assembly.

Remove locknut on plumbing support brkt. and mount switch box over existing stud. Re-install brkt. and route red and white tubes behind blue hose as shown.

Route gray cable down back and under tub along inlet plumbing, remove wires from existing pressure switches and connect to gray cable per note below.

Detergent switch (Red Tube)
1. Connect black wire from gray cable to black/yellow wire from switch.
2. Connect brown wire from gray cable to blue wire from switch.

Sanitizer Switch (White Tube)
1. Connect white wire from gray cable to white/yellow wire from switch.
2. Connect red wire from gray cable to blue wire from switch.



After cutting the existing red & white tube approximately 12" above the gray tube stiffener, insert the cut ends into the clear tubes as shown.

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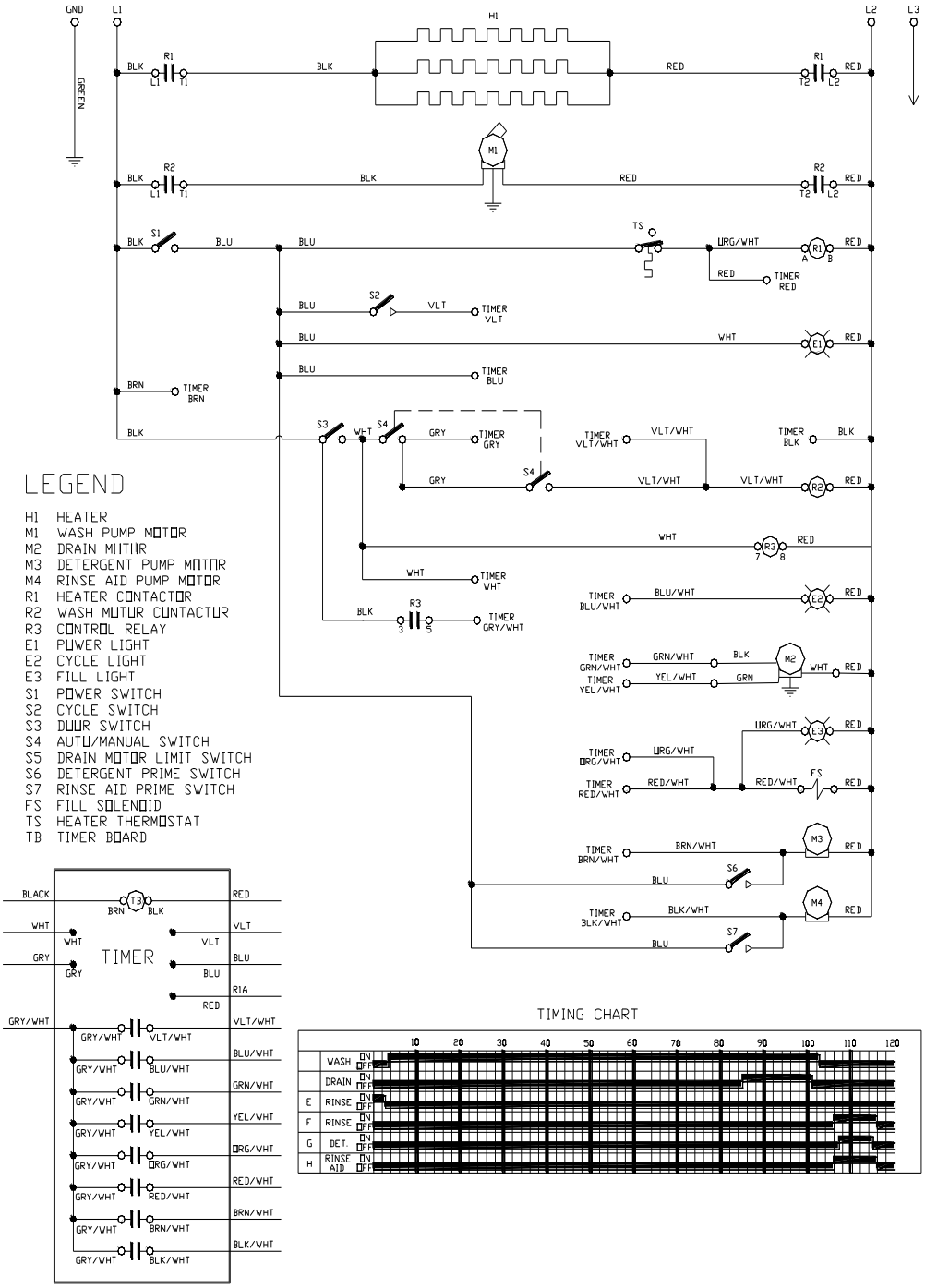
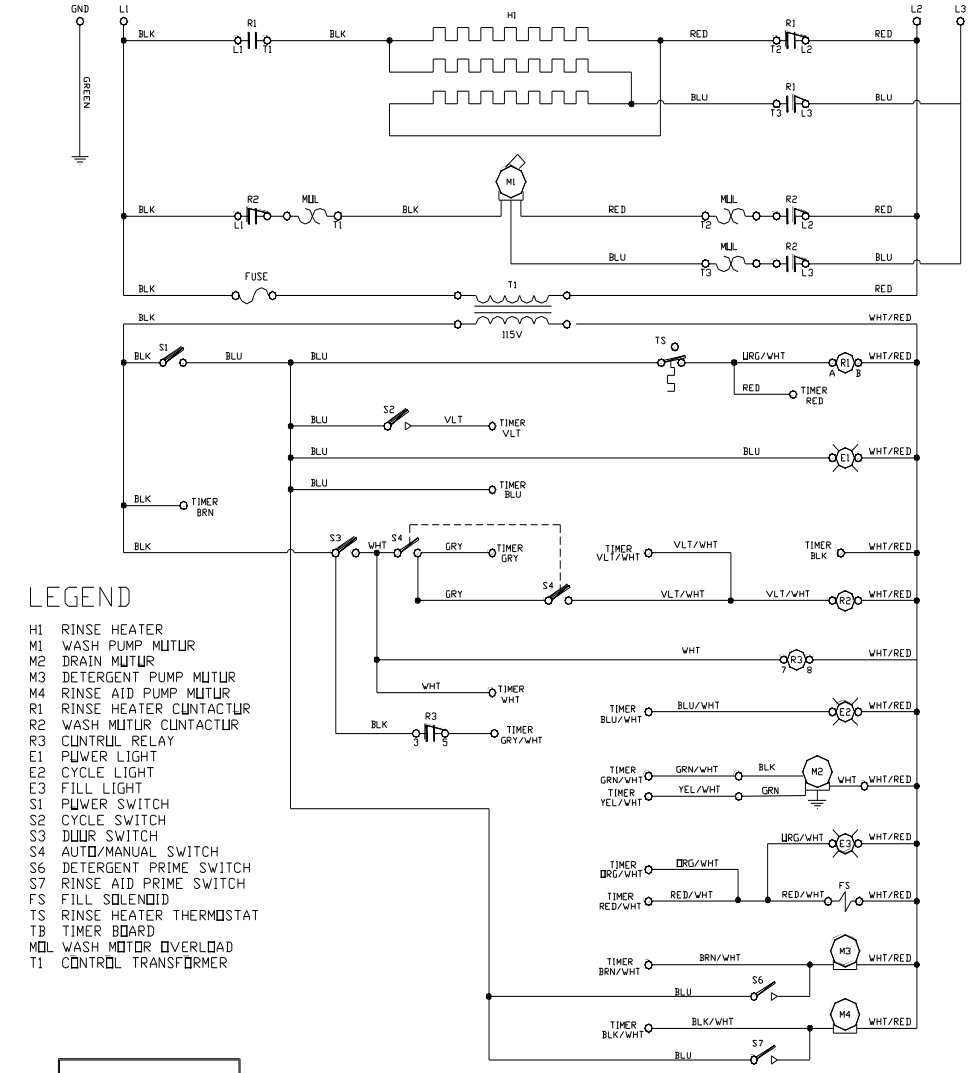
AVENGER HT 208-230 VOLT-60 HERTZ-SINGLE PHASE

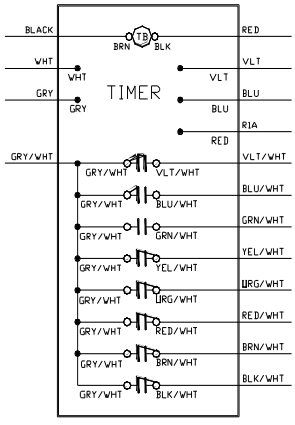


AVENGER HT 480 VOLT-60 HERTZ-THREE PHASE

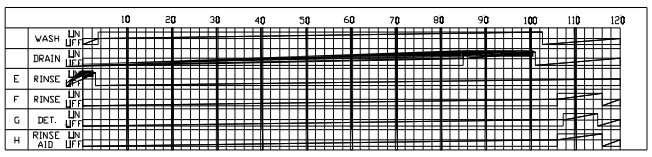


LEGEND

H1 RINSE HEATER
M1 WASH PUMP MOTOR
M2 DRAIN MOTOR
M3 DETERGENT PUMP MOTOR
M4 RINSE AID PUMP MOTOR
R1 RINSE HEATER CONTACTOR
R2 WASH MOTOR CONTACTOR
R3 CONTROL RELAY
E1 POWER LIGHT
E2 CYCLE LIGHT
E3 FILL LIGHT
S1 POWER SWITCH
S2 CYCLE SWITCH
S3 DOOR SWITCH
S4 AUTO/MANUAL SWITCH
S6 DETERGENT PRIME SWITCH
S7 RINSE AID PRIME SWITCH
FS FILL SOLENOID
TS RINSE HEATER THERMOSTAT
TB TIMER BOARD
MOL WASH MOTOR OVERLOAD
T1 CONTROL TRANSFORMER



TIMING CHART



AVENGER LT 115 VOLT-60 HERTZ-SINGLE PHASE